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CANADIAN
PORT AND HARBOUR
DIRECTORY

1923





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HONOURABLE ERNEST LAPOINTE
Minister of Marine and Fisheries

CANADIAN PORT AND HARBOUR DIRECTORY

1923

With Maps and Photographs;
Detailed Descriptions of Ports
and Harbours; and Latest Re-
turns of Population, Industries,
Trade and Shipping



OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1923

To The Honourable ERNEST LAPOINTE,
Minister of Marine and Fisheries.

SIR,—I have the honour herewith to submit the new 1923 Canadian Port and Harbour Directory, undertaken to replace the 1914 work, which although carefully compiled, has now become somewhat obsolete.

The preliminary part of the 1914 edition dealing with various forms of aids to navigation, hydrographic and tidal surveys, steamboat inspection, etc., has been omitted from the present work, as also the concluding part, describing some Canadian waterways.

The 1923 edition is purely a Port and Harbour Directory, and although special attention has been given to the larger ports, which have changed materially in the last decade, all harbours of any consequence, sea or inland, have been covered.

The 1914 work comprised descriptions of 240 ports and harbours; the 1923 one contains 300.

The information embodied in the work was derived from harbour commissions and harbour masters throughout Canada, the latest Canadian, Admiralty, and American hydrographic publications, the latest returns of the Departments of Customs and Excise, and of Trade and Commerce, the Marine Department's "1923 Lists of Lights, Buoys, Beacons, and Fog Signals, and the Chief Engineer's, Inspector of Harbour Commissions, Tidal Survey, and Pilotage branches of the Marine Department".

Lloyd's agents throughout Canada were taken from Lloyd's 1923 calendar. The list of Lloyd's Surveyors in Canada was kindly furnished by Mr. S. R. Davies, Secretary of Lloyd's Register of Shipping, 17 Battery Place, New York.

The ports have been grouped geographically from East to West; the sea ports and harbours under the different sea-coast provinces (Cape Breton being taken as a separate entity); the inland ones under the different bodies of inland water.

This system should be followed in future editions, as it keeps intact, separate and special directories for each maritime province, and each body of inland water, within the general one.

The maps inset were reduced from large scale plans of harbours in the possession of the Canadian Hydrographic Office.

Mr. Charles MacGreevy, of the Canadian Hydrographic office, supplied all the numerous charts consulted, and was most helpful.

The work was compiled by Mr. D. C. Campbell, assisted by Miss L. Gay, of the Reports Branch of the department.

A. JOHNSTON,
Deputy Minister of Marine and Fisheries.

ERRATA

Page 147, line 9 from bottom should read as follows: “ **Ha Ha Bay, P.Q.**—On south shore of Saguenay river is 6 miles deep, and”

Page 160, line 12 from top should read as follows: “ Harbour Commissioners’ Elevator No. 2 has a storage capacity of ”

Page 338, line 10 from bottom delete: “ Grand Trunk Pacific Coast Steamship Co. from Prince Rupert.”

Page 339, line 6 from bottom delete: “ Grand Trunk Pacific Coast Steamship Co., Ltd.”

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SEA PORTS AND HARBOURS

NOVA SCOTIA

Abbot Harbour, N.S.—SE. coast, lies between Abbot island and the main shore to the eastward—the harbour about 1 cable wide and $1\frac{1}{2}$ cables in length though small, affords good shelter to small craft in $3\frac{1}{4}$ fathoms and is easy of access from the south.

Light.—On mainland, east side of harbour, a mast shows 38 feet above high water, a white fixed light.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot,” page 226, covering chart No. 2537.

Port Charges.—Are harbour master’s dues, 50 cents for every ship of fifty tons register or under, increasing according to size to \$5 for vessels between 700 tons and 1,000 tons register, and \$7 for vessels over 1,000 tons register, payable twice a year in the Dominion. Sick mariners’ dues: 2 cents per register ton, payable once a year in the Dominion for ships of 100 tons burden or less, and three times a year in the Dominion for ships of over 100 ton burden.

Communication.—Telegraph office—nearest railway station Pubnico at head of Pubnico harbour.

Advocate Harbour, N.S.—Bay of Fundy—is at NE. end of Advocate bay whose NW. and SE. points are cape Chignecto and cape D’Or respectively.

From the middle part of the north shore of Advocate bay a natural sea wall of stones 10 feet high extends almost continuously to the northern entrance of cape D’Or between which and Advocate settlement is formed a basin drying to 2 feet at low water springs. Near the northern extreme of cape D’Or is an opening at high water in the wall allowing small vessels to pass into the basin where they ground at low water. In Advocate bay between cape Chignecto and cape D’Or about $7\frac{1}{2}$ miles apart, there is good anchorage in depths under 15 fathoms with winds from WNW. to ESE. through north.

Tides.—At cape Chignecto, springs rise 37 feet, neaps $30\frac{1}{2}$ feet.

Light.—On S. side of entrance to harbour, a white square wood tower, dwelling attached, shows 36 feet above high water, a white fixed light.

Port Charges.—Are sick mariners’ dues 2 cents per ton register paid three times a year if not paid elsewhere, and optional with fishing vessels; and harbour master’s dues 50 cents for vessels of 50 tons and under increasing up to \$5 for vessels of over 700 tons up to 1,000 tons register, and for vessels over 1,000 tons \$7, twice a year if not paid elsewhere.

Supplies.—Ordinary ships’ supplies are obtainable.

Advocate Harbour Settlement.—On north shore of harbour—has post and telegraph offices, and a wharf; the approach to which is marked by red spar and black spar buoys; the nearest railway station is at Parrsboro.

NOTE.—Miles are sea miles. 1 sea mile=6,080 feet. 1 cable=608 feet.

Amherst Harbour or Basin, N.S.—at extreme NE. end of Cumberland basin—is a small artificial harbour, 6 cables NE. of mouth of Amherst river—buoys mark the channel leading to Amherst basin. Vessels enter the harbour only on a high or rising tide, and lie aground at low water. The town of Amherst lies $2\frac{1}{2}$ miles ESE. of Amherst basin on opposite side of river crossed by International Railway Bridge at Amherst.

Provincial Boundary.—Close westward of Amherst basin is Missaguash river, forming part of the boundary between Nova Scotia and New Brunswick.

Light.—At Amherst point $3\frac{3}{4}$ miles SW. of the town of Amherst on outer end of the Government wharf, a mast shows 26 feet above high water, a white fixed light.

Wharves.—There are 2 wharves in the harbour, one 200 feet by 30 feet, and the other 150 feet by 30 feet, railway siding on each wharf, one shed and hoisting engine, depth of water at wharves 25 feet at high water.

Repairs.—There are no docks for repairs.

Port Charges.—Are harbour master's and sick mariners' dues.

Supplies.—Of all sorts are obtainable at Amherst in quantity.

Communication.—Postal and telegraph and a station on Halifax and Moncton branch of N.S. division of Canadian National Railways.

Town of Amherst.—On south bank of Amherst river near its mouth; contains hotels, churches, schools, sawmills, iron factories, foundries, and machine shops—is the centre of a good farming district and has an extensive lumber trade. Its chief shipments are: farm produce, lumber, cars, engines, and boilers.

In 1921 the population was 9,998. In 1920 Amherst had 71 industrial establishments employing 2,267 hands, value of products \$10,839,717.

Trade.—For the fiscal year 1921-22, value of imports \$256,731; of exports \$89,362.

Shipping.—During the fiscal year 1921-22, 1 vessel, register tonnage 90, entered and cleared the port.

Lloyd's Agent.—Chas. H. Read, P.O. Box 412, Amherst, N.S.

Annapolis Harbour, N.S.—is on the south side of Annapolis river, 12 miles from Digby. Vessels of moderate draught with a pilot can ascend the Annapolis river—from the basin to Annapolis harbour. The channel to Annapolis Royal is north of Goat island at the mouth of the Annapolis river, $7\frac{1}{2}$ miles NE. of Digby. The port is open all year.

Anchorage.—The anchorage off Annapolis in 6 fathoms is not good, owing to the eddies which cause vessels to foul their anchors. Vessels should moor with a swivel, or head and stern.

Lights.—One quarter of a mile NW. of Troop point, on north side of Annapolis river and $\frac{3}{4}$ of a mile NE. of Annapolis Royal, a white, square, wood tower shows from a height of 46 feet above high water a red fixed light.

NE. of Government pier at Annapolis Royal a similar tower shows from a height of 30 feet above high water, a red fixed light.

Port Charges.—Are harbour master's and sick mariners' dues.

Pilotage.—Services of pilots can be obtained by applying to the Collector of Customs at Digby at the entrance of Annapolis basin.

Supplies.—Ships' supplies of any description and in quantity are obtainable.

Communication.—Is a railway station on the main line of the Dominion Atlantic road, and has rail and telegraph connection with the general Canadian systems. There is a daily steamer to St. John.

The Town of Annapolis Royal is one of the oldest settlements in Nova Scotia and the centre of a fine fruit growing country. It contains several churches, an hotel, and schools besides mills and factories. The exports are chiefly apples, lumber and fish. Population about 1,000.

Trade.—Value of imports for fiscal year 1921-22, \$45,444; of exports, \$13,500.

Shipping.—During the fiscal year 1921-22, 179 vessels, register tonnage 11,307, entered the port; 180 vessels, register tonnage 11,050, cleared.

Antigonish Harbour, N.S.—northeast coast—south shore of George bay, at $2\frac{6}{10}$ miles westward of Monk head. The entrance to Antigonish harbour is nearly 1 cable wide between low points of sand off which a dangerous bar runs eastward for half a mile. The bar and the deep water up to the harbour are marked by spar buoys on either side. The bar has a depth of 6 feet at low water but both the depth and direction of the narrow channel over it change occasionally.

The harbour from the entrance runs in SW. for 6 miles; the channel between mud flats is from 9 to 36 feet deep for about 4 miles within the entrance, the shores are broken up into many coves and islets.

Tides.—Springs rise 4 feet, neaps 2 feet. The rate of streams in entrance seldom exceeds 2 knots except the spring ebb.

Town of Antigonish.—Is at head of western arm, $6\frac{1}{4}$ miles from harbour entrance; in the vicinity are gypsum mines, and besides gypsum, considerable quantities of lumber and agricultural products are shipped from Antigonish. The town has post and telegraph offices, and a railway station on the main line of the Canadian National System. Population in 1921 was 1,746.

Trade.—For the fiscal year 1921-22: value of imports was \$28,127; value of exports not given.

Shipping.—During the fiscal year 1921-22: 135 vessels, register tonnage 5,438, entered and cleared the port.

Lloyd's Agent.—C. E. Whidden.

Apple River, N.S.—A small harbour at the mouth of Apple river where it empties into Chignecto bay. The entrance points of the river are Pudsey pt. on the south and cape Capstan on the north, three-quarters of a mile apart. At the entrance the depth of water is 6 fathoms, and from $1\frac{3}{4}$ to $1\frac{1}{2}$ fathoms at low water inside the points.

The harbour is usually open about the beginning of April, and closed towards the end of December.

Tides.—At Spicer cove, about 3 miles SW. from Apple river springs rise 37 feet, neaps $30\frac{1}{2}$ feet.

Port Charges.—Sick Mariners' and Harbour Master's dues.

Light.—On cape Capstan or Hetty point a white square, wood tower shows from a height of 64 feet above the water a white fixed light. A diaphone fog horn is operated at the station.

The Village.—Is $3\frac{3}{4}$ miles from the river mouth and contains post and telegraph offices.

Ships Supplies.—Apart from coal obtainable.

Barrington Bay Harbour, N.S.—SW. coast—is entered between Baccaro point on the east and cape Sable on the west, $7\frac{1}{2}$ miles apart. From the entrance the bay trends northward $8\frac{1}{2}$ miles to the town and river of Barrington at the head.

The western entrance to the head of Barrington bay through Barrington passage at head of Cape Sable island, is difficult and dangerous and should not be attempted without a good pilot. The passage is buoyed to aid local craft.

Off Beach point on the east shore of the harbour nearly $6\frac{1}{2}$ miles inside Baccaro point, sand flats extend SW. to NW. for $\frac{3}{4}$ of a mile; close to the western edge of these flats is a narrow buoyed channel for light draught vessels leading to Barrington.

Weeses ledge lies about $1\frac{1}{10}$ miles to the eastward of NE. point of Sable island, and between the ledge and the sand flats on the east is moored in 6 fathoms a light and bell buoy marking the limit of navigation for any but local craft.

Depths.—The general depths in the bay from the south entrance vary from 10 fathoms in the entrance to 5 fathoms, 3 miles north of it. For $1\frac{1}{2}$ miles north of the 5 fathom line, $3\frac{1}{2}$ fathoms can be carried, when the depth again increases to 5 and 6 fathoms for another $1\frac{1}{2}$ miles to the anchorage north of the light and bell buoy.

Anchorage.—Temporary anchorage may be had a quarter of a mile northward of the light and bell buoy.

Lights—Buoys.—For description of lights and buoys in Barrington bay and further hydrographic information, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot" pages 214 to 217 inclusive, covering chart No. 339, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast".

Directions.—See 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot", page 217, covering chart No. 339.

Tides.—In Barrington bay, springs rise $8\frac{1}{2}$ feet, neaps $6\frac{1}{2}$ feet.

Port Charges.—Harbour Master's and Sick Mariners' dues.

Ferry.—A ferry steamer plies from Barrington passage to North East point, Clarke harbour, and other places on Sable island.

Wireless Telegraph.—W.T. weather bulletins and warnings to mariners are issued from station in Barrington passage. At Cape Sable lighthouse is a wireless station range 250 sea miles; call letters V.C.U.; office open day and night.

Town of Barrington.—At the head of Barrington bay—has saw-mills and factories, post and telegraph offices. Fishing is the chief industry. Population

about 1,800; is a station on Yarmouth branch of Halifax and South Western road, and Liverpool branch of same road.

Yarmouth and Shelburne S.S. line calls twice a week.

Trade.—For fiscal year 1921-22, value of exports \$177,971; of imports \$14,350.

Shipping.—During the fiscal year 1921-22, 801 vessels, register tonnage 44,670 entered and cleared the port.

Lloyd's Agent.—W. W. Gray.

Bear River Harbour, N.S.—Is at the mouth of the Bear river, south shore of Annapolis basin, opposite Digby gut. The entrance to Bear river is shallow, and buoyed in accordance with the Canadian custom.

A railway bridge crosses the river at Winchester point the west entrance point of the river.

Vessels ground at the village of Bear River at low tide. The harbour is open all year.

Tides.—Rise 22 feet springs, 17 feet neaps.

Light.—On Winchester point a white square wood tower shows from a height of 72 feet above high water, a red fixed light.

Wharves.—There are 6 wharves with a total area of 100,000 square feet. Below the wharves vessels are afloat at low water, and there is good and safe anchorage.

Port Charges.—Are harbour master's and sick mariners' dues, at regulation rates.

Supplies.—Ships' Stores are obtainable.

Communication.—Is a station on the main line of the Dominion Atlantic road, and connected with the Dominion system. Contains a post office, and has a considerable trade in lumber.

Shipping.—During the fiscal year 1921-22, 77 vessels, register tonnage 5,996 entered the port; 78 vessels, register tonnage 6,052 cleared.

Beaver Harbour, N.S.—NE. Coast.—Although numerous dangers fringe the coast in the vicinity of this harbour, it is easy of access after Beaver island lighthouse has been identified, the entrance channel being straight and deep after passing Beaver island.

Anchorage.—For strangers the best anchorage is in 42 feet a quarter of a mile north eastward of the cove, with Quoddy hill in line with the south point of Hardwood island.

For small coasting craft, there is perfect shelter in the cove itself in 18 feet mud bottom.

Macleod cove affords good anchorage in 21 feet over mud, and is entered by a narrow channel with 20 feet, west of Macleod island; a good berth is $1\frac{1}{2}$ cables north westward of the north point of Macleod island.

Salmon River anchorage, 4 cables northward of Hardwood island light, has perfect shelter in $4\frac{1}{4}$ fathoms.

Neither Macleod cove anchorage nor Salmon river anchorage should be attempted without a pilot, as the shoals are not buoyed.

Lights, etc.—For description of lights and other aids to navigation, see “Admiralty 1921 Nova Scotia (SE. coast) and Bay of Fundy Pilot,” pages 84 to 86 inclusive, covering Chart No. 2663, and department’s 1923 “List of Lights and Fog-Signals on the Atlantic Coast”.

Directions.—See page 87, “Admiralty 1921 Nova Scotia (SE. coast) and Bay of Fundy Pilot,” page 87, covering Chart No. 2663.

Tides.—Rise 6 feet springs, $4\frac{1}{2}$ feet neaps.

Port Charges.—Are harbour master’s and sick mariners’ dues.

Supplies—Water.—Firewood and a limited supply of fresh provisions may generally be obtained.

Communication.—There is a telegraph office and a post office at Beaver Harbour.

Belliveau Cove, N.S.—On south side of St. Mary bay, on the south side of bay of Fundy, is a small harbour, with anchorage $1\frac{1}{2}$ miles off the cove.

Light.—On outer end of east pier a white, square, wood tower shows from a height of 24 feet above high water, a green fixed light.

Wharves.—There are 3 wharves, two government ones, one of them T-shaped, and a private wharf owned by B. Belliveau & Co.

Tides.—Rise 24 feet springs, 20 feet neaps.

Supplies.—There are two general stores where all kinds of ships supplies including rope can be obtained.

Water.—Pure water from a fountain can be obtained in quantity.

Communication.—Belliveau station on the Dominion Atlantic main line is inland about $2\frac{3}{4}$ miles south of the cove; has a post office.

Bridgewater Harbour, N.S.—South coast. Ten miles from the narrows between Krout point and Fort point lighthouse, 2 cables wide, where the Lahave river expands into Lahave harbour, in a NW. by W. direction is Bridgewater harbour. The river is buoyed from the mouth to Bridgewater, with least depth of 2 fathoms near Bridgewater, and 16 feet alongside Bridgewater wharves. The harbour is open all year.

Tides.—Rise 6 feet at ordinary tides.

Wharves.—The principal wharf is the Railroad main wharf, with railway siding, and quay for 3 large vessels on each side. Other wharves are Dawson’s 700 feet long accommodating 3 vessels at a time. Davison’s lumber wharf, 375 feet long, alongshore, accommodating 7 vessels of 1,000 tons each; and a west side wharf about 250 yards long on harbour front is used for small vessels discharging coal and merchandise and loading lumber, and will accommodate 10 schooners. There are no sheds on the wharves.

Port Charges.—Are harbour master’s fees, and sick mariners’ dues. Wharfage is free.

Pilotage.—There are no regular pilots.

Communication.—The town is connected by rail and telegraph with the Dominion systems, and by steamer with Halifax.

Supplies.—All kinds of stores, and provisions easily obtained.

The Town.—Of Bridgewater had in 1921 a population of 3,147. The industries are shipbuilding, fish curing and woodworking. There are various factories, and two crushing mills in connection with gold mining.

Trade.—The exports are lumber, cordwood, staves and bark; value of exports for fiscal year 1921-22, \$105,532; of imports \$44,363.

Shipping.—During the fiscal year 1921-22, 42 vessels, register tonnage 8,768, entered the port; 31 vessels, registered tonnage 5,788, cleared.

Canso Harbour, N.S.—south coast, is at southern entrance of Chedabucto bay, and formed by Piscatiqui and Grassy islands on the east and the mainland and Durell island on the west—Cutler or Hart island and shallow water off it, shelters it from the north, and Grave islet and the bar uniting it to Lanigan beach protect it from the SE.

The entrance to the harbour is between Grave and Cutler islands within which and off the town is secure anchorage for vessels of any draught.

The harbour has an historical interest dating from the 16th century, and the traces of an extensive fort are still to be seen on Grassy island.

Depths.—The ship channel between Grave and Piscatiqui islands has a least depth of 21 to 24 feet and the north entrance between Cutler and Piscatiqui islands a least depth of 20 feet.

In using the north channel two beacons, one on Grave island and the other a little back from Lanigan beach in line lead between Cutler or Hart island on the starboard and Starling rock on the port side.

Lights, etc.—For description of lights and other aids to navigation and additional hydrographic information relating to Canso harbour and its approaches, see Admiralty 1916 "St. Lawrence Pilot," Vol. 2, pages 100 to 105 inclusive, covering chart No. 2163, also department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions.—See Admiralty 1916 "St. Lawrence Pilot" Vol 2, pages 105 and 106, covering chart No. 2163.

Wharves.—Are: one, 110 feet frontage, 14 feet water at head; one, 110 feet frontage, 16 feet water at head; one 60 feet frontage, 12 feet water at head; one 150 feet frontage, 16 feet water at head; one 80 feet frontage, 16 feet water at head. There is also a wharf at the mouth of the Tickle river.

Port Charges.—Harbour master's and sick mariners' dues.

Pilotage.—Is non-compulsory.

Tides.—In Canso harbour springs rise $6\frac{1}{2}$ feet, neaps $4\frac{1}{2}$ feet.

Storm Signals.—Are displayed in Canso harbour from a staff east of the Roman Catholic church.

Life Boat.—There is a life boat station on Lanigan beach, on south shore of harbour.

The Town.—The newer part of the town is built on the south shore of the Tickle river, a narrow boat channel separating the mainland from Durell island; there are several churches. Population in 1921, 1,626.

Trade.—For the fiscal year 1921-22, value of exports \$214,890; of imports \$38,851.



Canso. Views of Harbour.

Shipping.—During the fiscal year 1921-22, 1,606 vessels, register tonnage 167,643, entered the port; 1,630 vessels, register tonnage 159,706, cleared.

Lloyd's Agents.—A. N. Whitman & Son.

Chebogue Harbour, N.S.—west coast—is at the mouth of the Chebogue river. The harbour from Chebogue point, its western entrance point, trends NNE. 6 miles to the railway bridge crossing Chebogue river at the head of the harbour.

To the eastward of Chebogue point is a group of islands in the harbour entrance, the southernmost being Garden head on the east and Robins head on the west, and the two channels into the harbour lead west of Garden head and east of Robins head.

Not more than 11 feet can be carried across the bar west of Garden head to the limited anchorage in $2\frac{1}{2}$ fathoms— $1\frac{1}{4}$ miles NE. from Chebogue point. There are beach protection works on the west side.

Tides.—Rise in Chebogue river springs 15 feet, neaps $11\frac{3}{4}$ feet.

Directions.—See 1921 "Nova Scotia (SE. coast) and Bay of Fundy Pilot," pages 236 and 237, covering chart No. 2537.

The Village.—of Chebogue point lies $\frac{3}{4}$ of a mile NW. of the anchorage, has no post office, and the nearest railway station is at Yarmouth.

Has an extensive lobster fishery—shipping lobsters to Yarmouth for the Boston market, about 27 boats fish from the west harbour and 16 from the east harbour, employing about 100 men. The Neville, Walter Simpson and Co.'s and T. R. Beveridges, are the principal canneries.

Chester Harbour, N.S.—Southeast coast, is on north shore of Mahone bay. The harbour is $1\frac{1}{2}$ miles long and 1 mile wide, is commodious, safe and easy of access.

There are 2 channels leading into the harbour, the southern one between Clay and Quaker islands being more direct than the eastern one between Mountain and Saddle islands which is narrow and somewhat intricate.

Anchorage.—for vessels of deep draught is in a depth of 7 fathoms, mud, with north points of Norse and Mountain islands in line and NW. extremes of Quaker and Norse islands also in line.

Directions to Chester Harbour.—See 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," pages 175 and 176, covering chart No. 343.

Light.—On Quaker island off Chester a white square wood tower, dwelling attached, shows from a height of 109 feet above high water a fixed red light. For other aids to navigation and additional hydrographic information, see 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," pages 172 to 175 inclusive, covering chart No. 343.

Wharves.—There are 3 wharves in the harbour with depth of 3 fathoms at head at low water, and 3 others where vessels load at high tide.

Port Charges.—As at other Canadian ports.

Pilotage.—Is not compulsory.

Tides.—Springs range $7\frac{1}{2}$ feet, neaps range $6\frac{1}{2}$ feet.

The Town.—Has post and telegraph offices and railway station. Chief trades: fishing and lumber.

Shipping.—In fiscal year 1921-22, 119 vessels, register tonnage 3,435, entered the port; 118 vessels, register tonnage 3,406, cleared.

Clarke Harbour, N.S.—is on SW. shore of Cape Sable island, is divided into upper and lower harbour, the latter being inside Swim point on the NE. and Round island on the SW.

The entrance is from the NW. and the channel well buoyed with depths of 14 feet leading to the limited anchorage NE. of Round island.

Harbour is usually open all year.

Breakwater.—On the north side of the harbour inside the entrance is a submerged breakwater.

Wharves.—East of the breakwater is Scotia wharf, length 400 feet, width 38 feet, depth of water at high tide 16 feet, on the wharf are a freight shed, 2 lobster factories, and a life boat shed.

One hundred yards east of Scotia wharf is Brannen's wharf, 400 feet by 40 feet, depth alongside 16 feet at high water, on it are a freight shed, coal sheds and warehouse.

About $\frac{1}{4}$ mile east of Brannen's wharf, Kenny wharf, 350 feet by 28 feet, has a depth of 13 feet at high tide, and a fish curing building.

Central wharf, 100 yards to the east, 600 feet long by 50 feet wide, has 13 feet alongside at high tide, on it is a large coal shed, a lobster packing establishment, and a freight warehouse.

In lower Clarke harbour are: Government wharf, close west of Swim point, 250 feet long and 40 feet wide, depth of water 20 feet at high tide.

Swim point wharf, 150 feet by 28 feet, depth alongside 18 feet at high tide, with 5 fish packing and curing establishments.

Close east is Duncan's wharf, 230 feet by 25 feet, depth alongside 18 feet at high tide, and fish curing building.

On Round island is F. & E. Davis & Co.'s fish packing factory, and a wharf with 12 feet alongside at low water.

Tides.—Rise, springs 11 feet, neaps 9 feet.

Port Charges.—Usual port charges, and wharfage according to schedule.

Light.—On West Head, Cape Sable Island, a white square wood tower shows from a height of 42 feet above high water, a white fixed light, hand fog horn operated in connection with light.

Bell-Buoy.—A red bell buoy is moored in 8 fathoms, 1 mile SW. of West Head light and 6 cables NW. of Hospital ledge.

Life Saving Station.—There is a life saving station at Clarke harbour.

Repairs.—No docks for repairing vessels.

Supplies.—Are obtainable.

Communication.—The town has postal, telephone, and telegraphic connection, and a steamboat service to Barrington Passage, at which is the nearest railway station.

The Town of Clarke Harbour is built on the NE. shore between Split and Swim points.

Population about 2,000.

Shipping.—During the fiscal year 1921-22, 542 vessels, register tonnage 24,493, entered the port; 551 vessels, register tonnage 23,271 cleared.

Clementsport, N.S.—Is on south shore of Annapolis basin at the mouth of Moose river—has 2 wharves with 16 feet of water alongside at high tide, and a buoyed channel leads to the wharves. Is an outport of Annapolis Royal.

Port Charges.—There is a harbour master and the charges are harbour master's and sick mariners' dues.

Communication.—Postal and telegraph—and station on main line of Dominion Atlantic road. Steamship connection with St. John and other bay of Fundy ports.

Shipping.—During the fiscal year 1921-22, 20 vessels, register tonnage 1,207 entered and cleared the port.

Country Harbour, N.S.—SE. coast—is close westward of Isaac harbour, separated from it by Ragged point, its NE. point of entrance.

Between Ragged point and the shore of Country Harbour head peninsula opposite, the entrance is about 8 cables wide with depth of 50 feet.

At Harbour point nearly 1 mile inside Ragged point, the harbour is 4 cables wide and from there runs in a NW. direction in a narrow and deep indentation, with an average width of between 3 and 5 cables and depths of 5 to 10 fathoms for 4 miles from the entrance to an excellent land locked anchorage in from 5 to 7 fathoms mud.

The harbour is navigable for $2\frac{1}{2}$ miles above the anchorage for large vessels, and small vessels can proceed farther—is generally considered finest harbour on coast east of Halifax.

Tides.—Springs rise $6\frac{1}{2}$ feet, neaps $5\frac{1}{2}$ feet.

Directions.—See 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot", pages 65 and 66, covering chart No. 2547.

Wharf.—There is a government wharf 9 miles from the entrance.

Communication.—Postal and telegraph. Halifax and Canso SS. Co. calls once a week.

Digby Harbour, N.S.—On west side of Annapolis basin—is entered through Digby gut. A buoyed channel, 200 feet wide, with least depth of 16 feet, is dredged to Digby Government pier. The harbour is open all year and well protected, storms from the northward and westward, however, bring in a considerable sea.

Anchorage.—Good anchorage is to be had off the town, about a mile north eastward of Digby pier in 6 to 8 fathoms, or nearer the town in 4 fathoms $\frac{1}{2}$ miles N.N.E. of the pier light.

Lights.—On Point prim, west entrance point of Digby gut, a square, wood tower, with vertical red and white stripes, dwelling attached, from 76 feet above high water, shows a white fixed flashing light.

Diaphone in connection with light.

On Victoria beach east side of Digby gut, a white, square, wood tower, shows 52 feet above high water, a white fixed light.

A fog signal is sounded from balcony of a wood building $\frac{3}{4}$ of a mile northward of the light.

On outer end of Digby pier, a white, square, wood tower shows 30 feet above high water, a white occulting light.

Light and Whistle Buoy.—Steel, black and white vertically striped is moored off Point Prim lighthouse, NNE. $1\frac{1}{2}$ miles.

Directions.—See Admiralty 1921 “Nova Scotia (south east coast) and Bay of Fundy Pilot”, page 254, covering chart No. 2651.

Tides.—Springs rise $27\frac{1}{2}$ feet, neaps 23 feet. The rate of tidal streams through Digby gut is from 4 to 5 knots, causing eddies especially on west side.

Port Charges.—Similar to those at other Canadian ports. Wharfage at government wharf is according to the tariff of tolls of the Marine Department.

Wharves.—Digby pier is 890 feet long, 50 feet wide, 45 feet depth of water at head; an arm of the wharf is 350 feet long, 50 feet wide, with 40 feet of water at head. In addition to this the largest wharf, are about 15 others ranging from 33 feet to 317 feet in length, from 13 to 70 feet wide, and with depths varying from 12 to 21 feet alongside.

Pilotage.—Local pilots can be obtained who make charges according to agreement.

Storm Signals.—Are shown at Digby.

Life Boat.—Is stationed at Bayview west side of Digby gut.

Coal.—Canadian coal is kept in stock.

Supplies.—Ship's supplies are obtainable.

Communication.—Postal and telegraph—is a station on the main line of the Dominion Atlantic road. Canadian Pacific Railway Co's. steamer St. John, N.B., to Digby calls daily.

Town of Digby.—The principal industries of the town are fish curing and fruit canning, also popular as a summer resort particularly for Americans. Population in 1921, was 1,230.

Trade.—For the fiscal year 1921-22, value of exports \$337,884; of imports \$62,943.

Shipping.—During the fiscal year 1921-22, 1,092 vessels, register tonnage 233,869 entered and cleared the port.

Lloyd's Agent.—H. B. Short.

Freeport Harbour, N.S.—In a shallow bight between Dartmouth point the SW. extreme of Long island and Sand point, it is dry at low water—on its shores is Freeport Village. From Dartmouth point a bank under 3 fathoms extends for a short distance and is marked by a red can buoy. The harbour is entered through Grand passage.

Lights—Buoys.—As described for Westport harbour.

Port Charges.—Harbour Master's and usual port charges.

Communication.—Passenger steamers call at Freeport, St. John, and Yarmouth.

Guysborough Harbour, N.S.—east coast—is at head of Chedabucto bay, and a mile NNW. of Bigby head. It is an extensive inlet running to the northward with deep water inside the entrance bars, but the channel is narrow and

crooked, and the tidal streams rapid. It is navigable for ships up to the narrows, 4 miles from the entrance where the depth is 8 feet at low water.

Outer and Inner Bars.—The entrance channel into Guysborough harbour between Peart point on the westward and Stony patch on the east, is 80 yards wide, carrying 26 to 40 feet water. The outer sand bar stretches from Toby point $\frac{1}{2}$ mile southward of Peart point to Hadley beach immediately NE. of Stony patch, and has 16 feet on it at low water, and is impossible in a heavy sea. The inner entrance between Eliza point and Hadley beach to the eastward inside the inner bar, is 230 yards wide, and a depth of 13 feet at low water can be carried through it in a channel, 80 yards wide. The channel into the harbour is buoyed.

Anchorage.—At $\frac{2}{3}$ of a mile northward of Eliza point is anchorage in 6 fathoms, mud, off the town of Guysborough.

Light.—On west side of entrance, near Peart point, a white, square, wood tower shows 38 feet above high water, a white fixed light.

Beacon.—A truncated pyramid of timber 10 feet high, topped by a pole with discs, 13 feet high, is on the summit of Stony patch.

Tides.—Springs rise $6\frac{1}{2}$ feet, neaps $4\frac{1}{2}$ feet. The rate of the tidal streams in narrow entrance to harbour is from 4 to 5 knots.

Port Charges.—As at other Canadian ports.

Supplies.—Ship's supplies are obtainable.

Communication.—Postal and telegraph—nearest railway station, Mulgrave. Halifax and Canso S.S. Co. calls once a week. S.S. *Wesport* between Mulgrave and Guysborough, calls daily.

Town of Guysborough.—Is built on west shore of harbour inside Eliza point, deep water approaches close to the wharves. Fishing is a staple industry—is the county town—population about 1,600.

Shipping.—During the fiscal year 1921-22, 370 vessels, register tonnage 27,739, entered and cleared the port.

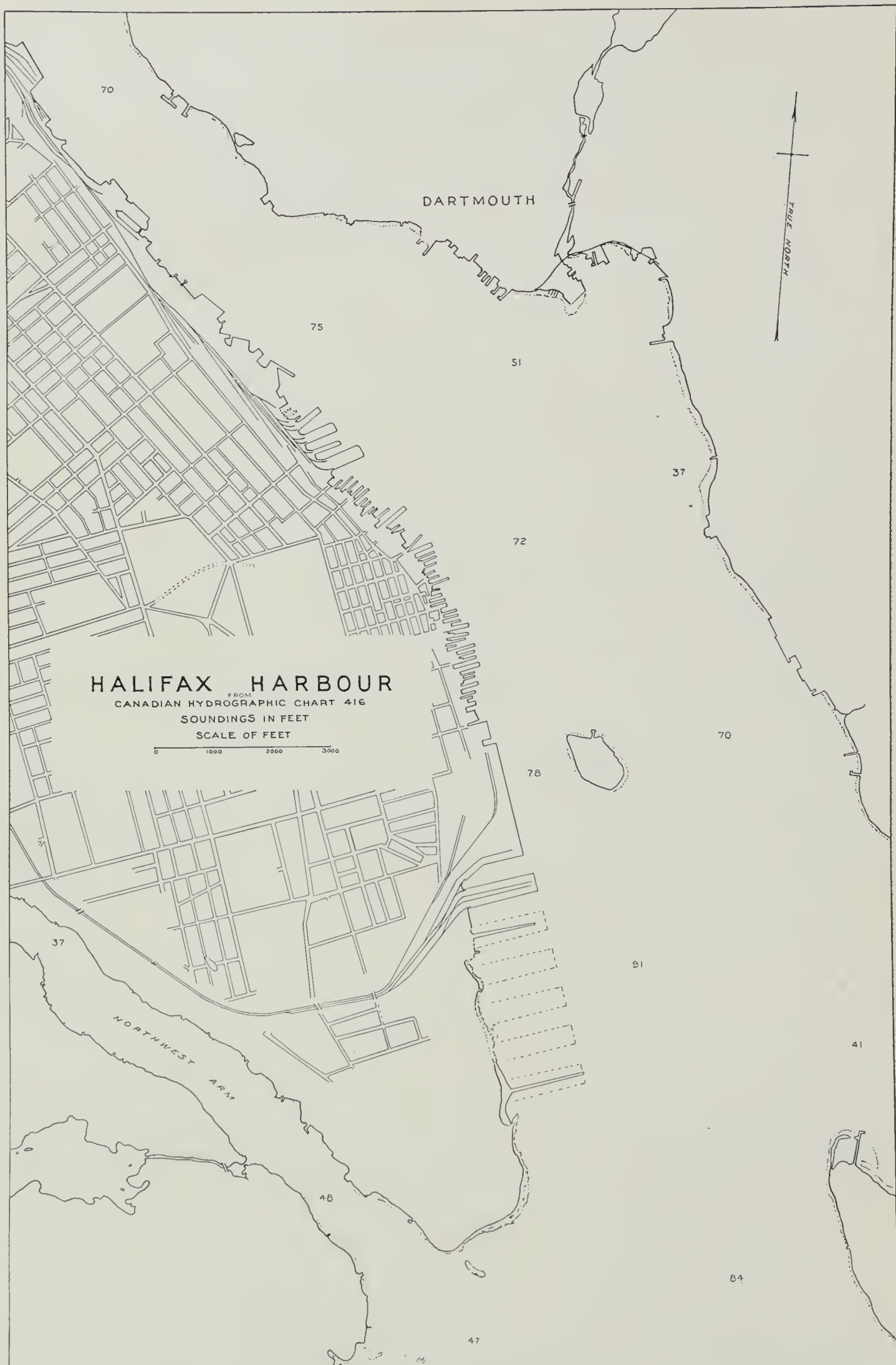
Lloyd's Agents.—B. & G. Jost.

Halifax Harbour, N.S.—SE. coast, has its entrance at Devil island to the NE. and Chebucto head to the SW., $5\frac{1}{2}$ miles apart, from midway between these the harbour trends in a general NW. direction for $13\frac{1}{2}$ miles to the head of Bedford basin.

The harbour proper inside Maenab island is from 1,600 to 1,400 yards broad, but at the narrows about 1 mile above the upper end of the city it contracts to less than 500 yards and then expands into Bedford basin, a deep basin with an area of 10 square miles and completely landlocked.

Maenab island $2\frac{3}{4}$ miles long and two-thirds of a mile in greatest breadth, lies at the entrance to the upper part of the harbour.

Pleasant point about 1 mile westward of the north part of Maenab island, is the north entrance point of the Northwest arm, a narrow inlet with least channel breadth of half a cable running in a NW. direction from the entrance for $2\frac{3}{4}$ miles to the head, and carrying depths of 6 fathoms to within 6 cables of the head.



Pleasant shoal with 2 to 7 feet water extends 4 cables SE. from Pleasant point. From the shore $\frac{1}{3}$ of a mile northward of Pleasant point a stone break-water extends in a ENE. direction for $\frac{1}{4}$ of a mile.

Lawler island, between the southern part of Macnab island and the mainland, blocks the passage east of Macnab island; only 10 feet of water at low water can be carried between Lawler island and the main, and only 5 feet between Lawler and Macnab islands.

The entrance to Halifax harbour proper is to the westward of Macnab island, through which vessels can carry 6 fathoms least depth into Halifax harbour and Bedford basin.

George island, about 2 cables long, lies about the same distance eastward of the southern end of the city.

Dartmouth, a suburb of Halifax, is on the east side of the harbour, at NW. end of Dartmouth cove.

Halifax harbour is open all the year round, and navigation is scarcely ever interrupted by ice—is one of the safest of world harbours, with space and depth of water sufficient for a large number of vessels. There are dangers in the approach, rendering caution necessary in fogs, but on the whole it is easier of ingress and egress than any other large harbour on the coast.

Anchorage.—Good anchorages may be had in Macnab cove on the west side of Macnab island is 7 to 8 fathoms mud, and also anywhere in the harbour northward of Macnab island and eastward of line joining George island light and Mauger beach light on extreme west point of Macnab island, but so as not to approach nearer than 2 cables to any of the commercial wharves when swinging.

Lights.—On west end of Mauger beach, a circular stone white tower shows 64 feet above high water a white flashing light.

Diaphone attached.

On Macnab island NW. end, a white, square, wood tower shows 132 feet above high water a white fixed light.

On George island, west side, a white, octagonal, reinforced concrete tower shows 62 feet above high water a white group flashing light. Machinery fog bell attached.

In Dartmouth back of the graveyard a black steel skeleton tower shows 127 feet above high water a red fixed light.

Buoys.—A gas buoy, red occulting light marks Ives Knoll shoal close northward of Ives point, the NW. point of Macnab island. A black steel bell buoy marks east end of Pleasant shoal off Pleasant point.

For a further description of lights, buoys and other aids to navigation in Halifax harbour and approaches, and further hydrographic information, see 1921 Admiralty Nova Scotia (southeast coast) and Bay of Fundy Pilot, pages 122 to 133 inclusive, covering chart No. 2,320, also Department's 1923 "List of Lights on Atlantic Coast".

Directions.—See 1921 Admiralty Nova Scotia (southeast coast) and Bay of Fundy Pilot, pages 133 to 135, covering chart No. 2320.

Tides.—The rise of tide is 6 to $6\frac{1}{2}$ feet.

Port Charges.—Are harbour master's dues collected under an "Act to provide for the appointment of a harbour master for the port of Halifax", they are similar to the general fees, with exception of vessels under 20-ton burden, not being charged.

Sick mariners dues at rate of 2 cents per registered ton are collected three times a year, if not paid elsewhere.

Pilotage.—Under the Minister of Marine and Fisheries as the Pilotage Authority. Vessels of not more than 250 tons registered tonnage, propelled by steam or other mechanical power, engaged exclusively in fishing, are not compelled to pay pilotage dues unless a pilot be employed. Vessels registered in Canada of 20 tons registered tonnage are not compelled to pay pilotage dues unless a pilot be employed. The rates for pilotage are:—

Ships of not more than 200 tons \$9.60 inwards, \$9.60 outwards; over 200 tons and up to 300, \$13.20 inwards, \$13.20 outwards; over 300 tons and up to 400 tons, \$16.80 inwards, \$16.80 outwards; over 400 tons and up to 500 tons, \$19.20 inwards, \$19.20 outwards; over 500 tons and up to 600 tons, \$21.60 inwards, \$21.60 outwards; over 600 tons \$21.60 inwards and \$21.60 outwards and sixty cents for every 100 tons or fractional part thereof over 600 tons inwards and outwards.

Detention.—Ships under detention at quarantine in excess of two hours shall pay in addition to the regular pilotage dues \$3 for the next two hours of any part thereof and \$1 for every additional two hours or any part thereof, if detention exceeds four hours a charge for detention shall also be paid.

Movages.—Ships under 1,000 tons shall be required to pay movage charges but if a pilot is employed the rate shall be the same as for ships of 1,000 tons. Ships of 1,000 tons and over shall pay movage charges as follows; all ships of 1,000 tons and under 2,000 tons, \$5; all ships of 2,000 tons and over, \$10.

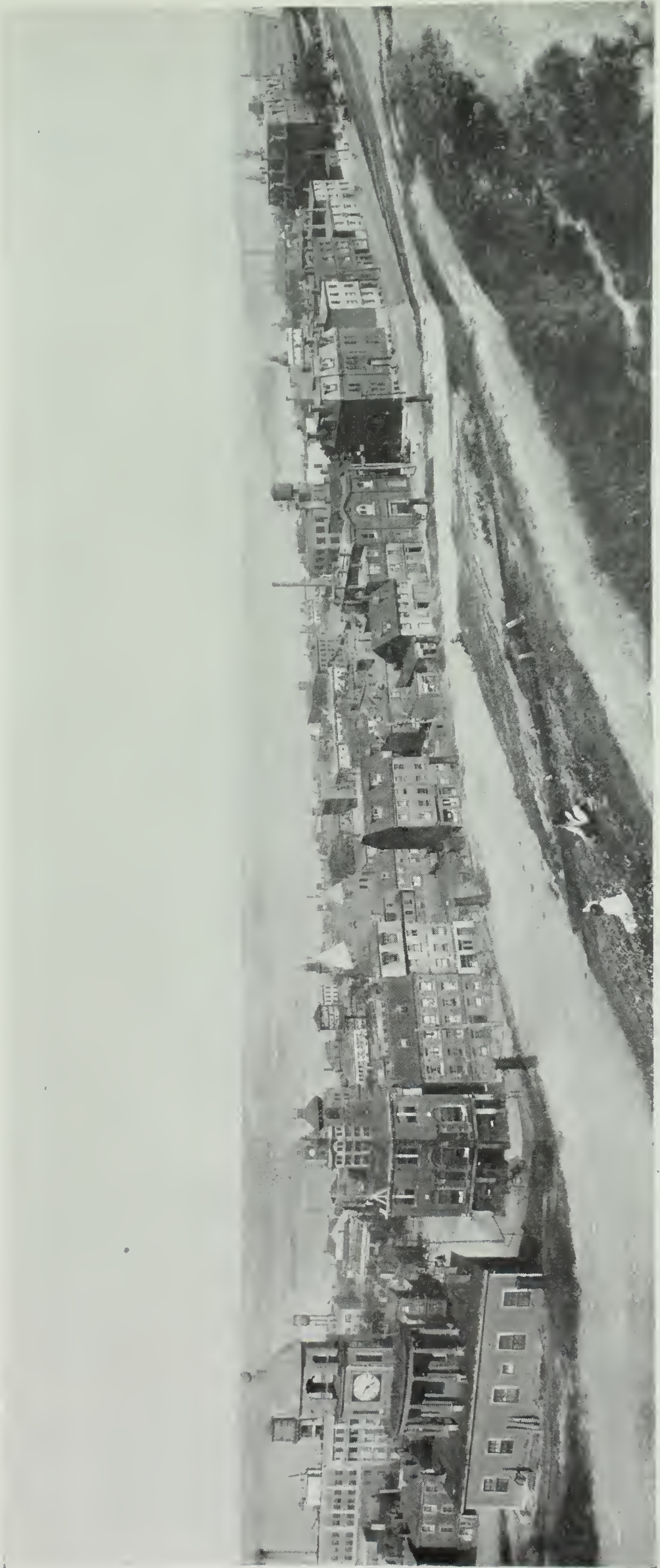
To Bedford basin, Lawler's island and the NW. arm, all ships of 1,000 tons and under 2,000 tons, \$10; all ships of 2,000 tons and over, \$20.

The charges for the services of a pilot shall be \$10 while compasses are being adjusted, \$15 for trial trips, and \$20 for trial trips if compasses are being adjusted at the same time, in addition to a charge for movage. If the compass adjustment for trial trips be carried not beyond the pilotage limits and extend over six hours \$25 and an extra \$10 for every additional six hours or part thereof, in addition to the regular pilotage dues outwards and inwards.

OCEAN TERMINALS

Of the proposed ocean terminal scheme the Bulkhead Passenger Landing quay, basin No. 1, and pier A are at present completed.

The Passenger landing quay opposite George island, is 2,006 feet long, least depth alongside 35 feet at low water, it is proposed to deepen this to 45 feet, and to build a two and a half storey passenger and freight building 116 feet wide along the full length of the quay front. Pier A is 1,250 feet long and 360 feet wide at the inner end and 320 feet at the outer, tapering slightly, the other 5 piers still to be built to the southward, the last one over the Pleasant point breakwater, will be of exactly the same dimensions, as will be also the basins between them. It is proposed to dredge the basins to a depth of 45 feet.



Halifax Harbour. From the Citadel.

On each of the piers will be 4 large double storey steel and concrete sheds, about 500 feet long and 100 feet wide.

There will be 4 berths for vessels not over 600 feet in length at each pier, and each berth besides its steel and concrete transit shed will be provided with railway tracks and platforms and independent railway connections for switching cars, team entrances, ramps, etc.

The lower floors of the sheds will be at car floor level and will be used for outbound or ocean going freight and the upper floors will be used for inbound freight and outbound passengers, etc.

WHARVES AND DOCKS

Proceeding northward from the Bulkhead Landing quay of the Ocean Terminals, there are a number of wharves of varying lengths, with slips between of varying widths up to the Intercolonial deep water terminus wharves, the principal of these are Whitman wharf, with shed, Robins wharf with shed, Long wharf with shed, Plant wharf with shed, Kings wharf, Cable wharf with shed, Steam Ferry wharf, Pickford and Blacks wharf with two sheds, this wharf is about 450 feet long, and 75 feet wide with a V-shaped slip on the north side, and 34 feet depth at end.

Then come the Ordnance yard wharves, the Furness Withy wharf, 600 feet long and 75 feet wide, with depths of from 40 to 12 feet on its north side in the slip 140 feet wide between it and the Commercial wharf, considerably shorter. Northward of the Commercial wharf are 9 or 10 comparatively small wharves, and then No. 2 wharf of the Deep Water Terminus of the Intercolonial Railway, 700 feet long, 235 feet wide, with depth at end of 45 feet and on north side of 45 to 30 feet, has railway sidings and a two storey shed, 200 feet wide, for nearly the entire length of the wharf, No. 3 wharf, 620 feet by 165 feet, with shed 590 feet by 125 feet, with grain carrier, 4 tracks, depth of water at end 27 to 30 feet.

No. 4 wharf, 550 feet by 90 feet, shed 435 feet by 56 feet, two coal chutes, 3 tracks, depth at end 27 to 30 feet.

The Government dockyard which has a length of about 2,700 feet on the harbour front and depths of from $12\frac{1}{2}$ to 36 feet alongside, has 4 wharves of varying lengths and frontages. No. 1 has a frontage on the harbour of about 500 feet. No. 2 of 150 feet, No. 3 of 300 feet, and No. 4 of about 500 feet.

Immediately north of the Government dockyard is the plant of the Halifax Shipyards Ltd. extending to and including the site of the Old Richmond Depot wharves, these wharves were practically demolished in the explosion of 1917 and the property was taken over by the Halifax Shipyards in 1918 for their own use, as described further on.

On the east side of the harbour from north to south is the Cable wharf opposite the graving dock with frontage on harbour of 300 feet, depth alongside 25 feet, off the town of Dartmouth are 7 or 8 wharves of varying lengths the largest about 250 feet, and on south side of Dartmouth cove is the Marine and Fisheries wharf about 325 feet long, with depth of 27 feet at end and 20 feet alongside.

Halifax Shipyards, Ltd.—In June, 1918, the Halifax Shipyards, Limited, took over the property of the Halifax Graving Dock, subsequently acquiring new property for a large shipbuilding and repairing plant.

The new property comprises 46 acres, and has a length along Halifax harbour of 3,300 feet.

Old pier No. 7, with a length of 650 feet, has been rebuilt, a new pile wharf 315 feet long has been built south east of the graving dock, and the old wharf at the foot of North Ferry street has been rebuilt and extended.

The new permanent buildings consist of—

Machine Shop.—A fireproof reinforced concrete building, three stories high, 280 feet long, 100 feet wide, with a travelling crane and all necessary machinery for extensive machine work.

Plate Shop.—A fireproof steel and brick building, 600 feet long, 75 feet wide, 60 feet high, with two travelling cranes. The ground floor contains all the machinery for fabricating steel plates for the erection of ships. Above this is located the loft.

Lean-to.—Fireproof, steel and brick, 500 feet long, 32 feet wide, one story high, attached to the west side of the plate shop.

Power House.—Fireproof, steel and brick, 140 feet long, 100 feet wide, two stories high, with travelling crane. This plant is capable of generating 4,000 horse-power. All machinery in connection with the shipyards operated by electricity furnished from the power-house. Reinforced concrete chimney 210 feet high, 10 feet diameter at top, eliminates the necessity of the mechanical apparatus for forced draught. Fuel for generating power will be crude oil.

Pump House.—Brick, 40 feet by 24 feet, in which are installed the pumps for pumping out and keeping dry the dry dock. The dry dock has been excavated out of solid rock, and the sides rebuilt with ashlar and concrete; it has a length of 567 feet, breadth 102 feet, with 27 feet of water on keel blocks.

Office and Stores.—Fireproof, reinforced concrete and brick, 285 feet long, 60 feet of which is four stories high, and the remainder of three stories, 50 feet in width, 225 feet of the ground floor and 75 feet of the first floor for stores and compressor plant, the remainder used for offices.

Fire protection is supplied by an 8-inch sprinkler system installed throughout all the buildings. A 1,000-gallons-a-minute Fire Underwriters' pump is installed in the power-house, with direct connections to the 8-inch sprinkler system and to a 40,000-gallon steel tank on a 75-foot steel tower. Two direct 6-inch water mains connected with the Halifax municipal water system supply the plant and the sprinkler system with fresh water.

The shipyards comprise four berths on pile foundations 615 feet long by 60 feet wide, equipped with thirteen steel guy derricks for placing plates in position on new ships.

These berths are immediately north of the Halifax Shipyards Graving Dock.

The two 10,500 tons ships of the C.G.M.M. were built at these yards.

Graving Dock of Halifax Shipyards, Ltd., about $\frac{1}{4}$ of a mile to the northward of the Government dock yard on west shore of harbour, has, with its

3 quay wharves, a frontage on the harbour of 825 feet. There are 3 sheds on the wharves with area of 21,552 feet, the depth of water at the quays is from 36 to 51 feet at low tide.

The graving dock has a length for docking of 567 feet, breadth of 102 feet, with a depth of 27 feet of water on keel blocks.

Repairs.—A marine railway at Dartmouth with several slips is capable of repairing vessels up to 3,000 ton burden.

Coal.—About 14,000 tons of coal are usually kept in stock, and about 100,000 tons imported annually, and about 3,000 tons received daily from the Canadian mines. Vessels coal alongside wharves or from lighters. About 500 to 1,000 tons can be placed on board in 24 hours.

The Halifax Tramway and Dominion Coal Co.'s wharves hold together about 7,000 tons of coal.

Fuel Oil.—There are facilities for taking in fuel oil.

Cold Storage.—There is a Cold Storage establishment with a capacity of 1,000 tons.

Elevator.—A grain elevator has a capacity of 500,000 bushels.

Supplies.—Of all kinds are readily obtainable.

Life Boat.—At Herring cove about $4\frac{1}{4}$ miles northward of Chebucto head is a life boat station.

Steam Ferry.—From a wharf near the Custom house a ferry runs to Dartmouth.

Wireless.—At Camperdown, near Chebucto head, is a Marconi Wireless station, range 250 miles, call letters V.C.S.

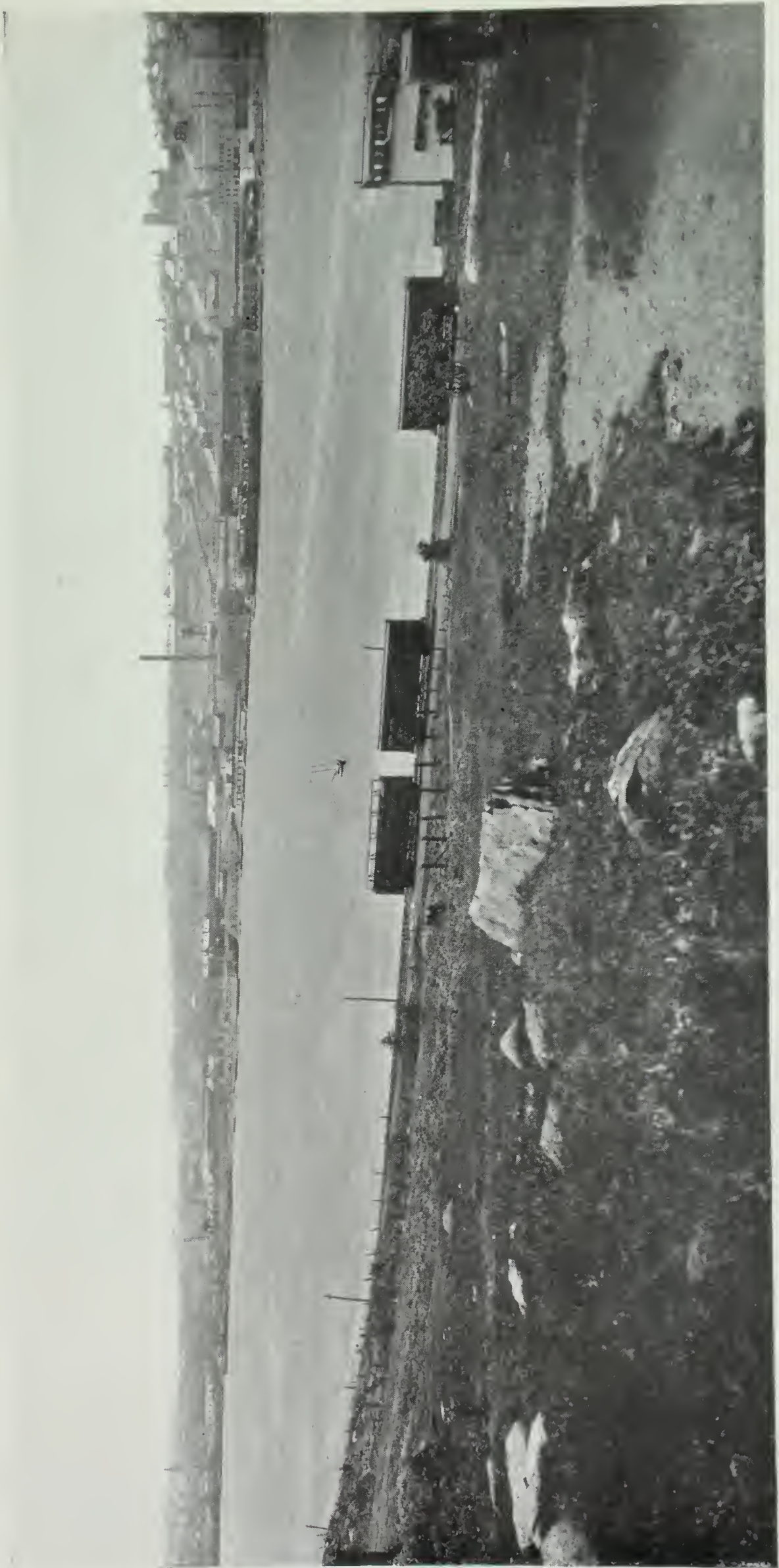
Storm Signals.—Are hoisted at the Citadel.

Time Ball.—A Time Ball is dropped from the citadel.

Hospital.—Seamen are received into the Victoria General Hospital for treatment.

OVERSEAS STEAMSHIP LINES TRADING FROM HALIFAX WITH THEIR ROUTES

Anchor-Donaldson..	Glasgow.
Canadian Government Merchant Marine..	Barbados, Trinidad, Havana, Demarara, Brazil, Glasgow, Liverpool, London, St. John's, Nfld.
Canada Steamship Co..	Southampton.
Canadian Pacific Ocean Service.. . . .	London.
Furness, Withy & Co., Ltd..	Havre, Liverpool, London, St. John's, Nfld.
France Steamship Co..	Havre.
Halifax and Newfoundland Steamship Co., Ltd..	Newfoundland (West Coast).
Halifax-St. Pierre Steamship Co., Ltd..	St. Pierre.
Manchester Lines..	Manchester.
Nova Scotia Steamships, Ltd..	Boston, St. John's, Nfld.
Pickford & Black, Ltd..	Jamaica, Santiago.
Royal Mail Steam Packet Co..	Barbados, West Indies, Demarara.
Red Cross Line..	New York, St. John's, Nfld.
White Star Dominion..	Glasgow, Liverpool.



Halifax Harbour from the Dartmouth shore.

COASTWISE STEAMSHIP LINES TRADING FROM HALIFAX WITH THEIR ROUTES

Halifax & Canso Steamship Co., Ltd.. ..	Canso.
Halifax & Glace Bay Steamship Co., Ltd..	Lake Ports, Cape Breton.
Halifax & Inverness Steamship Co., Ltd..	North shore, Cape Breton
Halifax & Sherbrooke Steamship Co., Ltd..	Halifax & Sherbrooke.
Halifax & Sheet Harbour Steamship Co., Ltd.	South Cape Breton.
Mahone Bay Steamship Co., Ltd.. .. .	Mahone Bay.
Oak Leaf Steamship Co., Ltd.. .. .	Margaret's Bay.

Communication.—Is the winter port for landing of mails from Great Britain—has direct steamer communication all the year round with United States, Great Britain, Newfoundland, Bermuda and West Indies—and is the winter port for steamers plying between Canada and South Africa.

Halifax and Canso ss. Co. calls once a week.

C.G.M.M. between St. John's, Nfld., and mainland calls once every two weeks.

Hendry, Ltd., ss. *Strathlorne*, from Halifax to Mulgrave, calls weekly.

Farquhar Co.'s Line, from Halifax to Ingonish, calls weekly.

Sherbrooke and Halifax ss. line calls once a week.

Halifax & Sheet Harbour ss. line calls weekly.

Red Cross line between New York and St. Johns, Nfld., calls every two weeks.

Halifax is a terminal of Halifax and Moncton line of Canadian National Railways, of the Dominion Atlantic, and of the Liverpool section of Halifax and South Western.

City of Halifax.—Capital of Nova Scotia, is built on the high land of the peninsula forming the west side of the harbour. Contains 42 churches, Dalhousie college, a ladies' college, schools and academies, courthouse, jails, opera house, hospitals and asylums, has all conveniences of a modern city.

The citadel at the back of the town and about midway between its north and south extremes, is on a commanding height 285 feet above the harbour, and with its flag staff is a conspicuous mark.

In 1920, Halifax had 315 industrial establishments employing 7,171 hands, value of products, \$25,593,326.

In 1921 had a population of 58,372.

Trade.—For the fiscal year 1921-22, value of exports \$24,507,039; of imports \$13,476,769.

Shipping.—During the fiscal year 1921-22, 3,322 vessels register tonnage 2,226,603 entered the port, 3,297 vessels, register tonnage 2,197,557 cleared.

Lloyd's Agents.—Pickford and Black, Ltd. (Pickford).

Lloyd's Surveyor.—T. Moon, 39 Furness Withy Bldg.

Hantsport, N.S.—Is on west bank of Avon river about $3\frac{1}{2}$ miles SE. of Horton bluff. Opposite the entrance to Hantsport, the depth of water ranges from 1 to 3 fathoms. In ascending the Avon river to Hantsport, local pilots are necessary, as there are extensive flats in the estuary, which, owing to velocity of the tides, are apt to shift, least depth over bar at Avon river is $1\frac{1}{2}$ fathoms at low water springs. Steamers call at the wharves on their way to ports on Avon river.

Repairs.—There are repair blocks in the harbour.

Supplies.—Ship's supplies are obtainable.

Port Charges.—Harbour master's and sick mariners' dues, as laid down in Canada Shipping Act, chapter 113.

Communication.—Postal and telegraph, and a station on the main line of the Dominion Atlantic Railway.

Shipping.—During the fiscal year 1921-22, 58 vessels register tonnage 35,731 entered the port; 61 vessels, register tonnage 35,278 cleared.

Hubbards Cove Harbour, N.S.—southeast coast, is at northwest end of St. Margaret bay, a fringe of shoal water extends a short distance from the shore between Mill cove to the south, and Hubbards cove.

The entrance to Hubbards cove is between Green point on the west and Red bank on the east, 9 cables apart. From this line the cove extends NW. one mile and then NE. $\frac{1}{2}$ mile to the head.

The cove has a general depth of 6 to 7 fathoms decreasing gradually to the head; is well sheltered and one of the best harbours on the south shore of Nova Scotia.

Light.—On Green point, a white, square, wood tower, dwelling attached, shows from a height of 60 feet above high water, a red fixed light.

Buoy.—A red bell buoy is moored 3 cables south of the SW. extreme of Slaughtenwhite ledge at the entrance to Hubbards cove.

Directions for Hubbards cove.—See 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot," page 162, covering chart No. 343.

Port Charges.—Are harbour dues as per regulations.

Village.—Hubbards village, near Hubbards cove, is connected with Halifax and Yarmouth by rail, has also post and telegraph offices. Fishing is the chief industry, the bulk of which is carried on by motor boats. There are four fishing concerns that ship fresh fish principally to the United States. A fishing plant for deep sea fishing has just been completed with building 140 feet by 100 feet, and suitable wharf accommodation for an extensive business. There are 2 mills and plenty of lumber and pulpwood available.

Ingramport Harbour, N.S.—south coast—is on north shore of St. Margaret bay. The entrance points about $\frac{1}{2}$ -mile apart are West head on the west and Boutilier head on the east.

A shoal with 3 feet of water lies about a cable off the east shore of the bay, 7 cables from Boutilier head, with this exception and a narrow fringe of shallow water off each shore the depth in the harbour gradually decreases from 10 fathoms in the entrance to 4 fathoms near the head of the bay and Ingram river.

Ingramport Settlement.—At the mouth of Ingram river, has a sawmill and wharf for loading lumber; post and telegraph offices, and is a station on the Liverpool section of the Halifax and Southwestern road.

Supplies.—Fresh provisions are obtainable, and water from a nearby lake.

Isaac Harbour, N.S.—SE. coast. lies $1\frac{3}{4}$ miles NW. of Harbour island and runs in a northerly direction nearly 3 miles between its entrance points Red

head and Ragged rocks to the westward about 6 cables apart. The harbour nowhere exceeds 4 cables in width.

From a point $\frac{1}{4}$ of a mile northward of Red head, Webb reef extends $2\frac{1}{2}$ cables westward with depths of 18 feet at its outer end—close NE. of Webb reef is Webb cove on east side of harbour in which coasting and fishing vessels anchor in 2 fathoms with perfect shelter. The channel between Ragged rocks and Webb reef is $1\frac{1}{2}$ cables wide with a depth of 40 feet, the prevailing depths in the harbour are from 29 to 34 feet.

Light.—On west side of harbour, a white, square, wood tower, dwelling attached, shows 80 feet above high water, a white group occulting light.

Hand fog horn in connection with light.

Buoys.—A red spar buoy marks the end of shoal off Red head; a similar buoy marks the west end of Webb reef.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot” pages 65 and 66, covering chart No. 2547.

Wharves.—Are a government wharf on west side of harbour with 15 feet depth of water at head, and about 7 other wharves with depths at head varying from 15 to 10 feet, freight sheds are on some of the wharves.

Port Charges.—Are harbour master's and sick mariners' dues.

Supplies.—Fresh provisions in moderate quantity, and water are obtainable.

Village of Isaac Harbour.—On west side of harbour has a population of about 700—has post and telegraph offices. Halifax and Canso SS. Co. calls once a week.

Shipping.—During the fiscal year 1921-22, 177 vessels register tonnage 24,638 entered the port, 172 vessels, register tonnage 25,007 cleared.

Lloyd's Agent.—Capt. J. McConnell.

Jeddore Harbour, N.S.—SE. coast—is the first ship harbour eastward of Halifax—its entrance between East and West heads—is $2\frac{1}{4}$ miles NE. from Jeddore head and $4\frac{1}{4}$ cables wide from shore to shore. Thorn shoal with 9 feet least water lies just outside the middle of the entrance to the harbour; it is marked by a black bell buoy. The channel between the shoal and East head is 60 yards wide between 3 fathom lines and carries a depth of 4 fathoms at low water.

Bar point on east side of harbour is close within the entrance, northward of Bar point a shoal extends 2 cables narrowing the navigable channel to 1 cable in width, with depth of $6\frac{1}{2}$ fathoms. A red conical buoy marks the shoal.

Inner Harbour.—The channel between mud flats continues in a northerly direction for $3\frac{3}{4}$ miles from the entrance to Brown islands close east of English point which separates the eastern and western arms of the harbour at its head.

Anchorage.—The best anchorage for strangers is between Marsh point on the west shore, $1\frac{1}{4}$ miles inside of Westhead, and Pea point on the east shore $4\frac{1}{2}$ cables NE. of Marsh point, in 7 fathoms mud.

Jeddore Ledges.—Comprise the scattered off lying dangers lying to the southward of Jeddore harbour, and should be approached with caution.

Leading Lights.—Two leading lights are on west side of Jeddore harbour, a little SW. of Marsh point. Front light: a white, square, wood tower shows 41 feet above high water, a white fixed light.

A similar tower, 850 feet, $345^{\circ} 30'$ true from front shows a similar light. The lights in line lead eastward of Thorn shoal into the harbour.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot”, page 115, covering chart No. 2439.

Water—Supplies.—Water can be obtained from a stream in Blakely cove on west side of harbour. Ship's provisions in small quantities are obtainable

Port Charges.—There is a harbour master and usual port charges.

Jeddore Settlement.—There is a somewhat scattered settlement at Jeddore harbour, the population being engaged in fishing and lumbering—there are a few stores and post and telegraph offices—the nearest railway station is at Musquodoboit at head of Musquodoboit inlet.

Halifax and Sheet Harbour SS. Co's steamer *Margaret* calls weekly.

Joggin Mines Harbour, N.S.—On south shore of Chignecto channel, $1\frac{2}{3}$ miles NE. of Ragged Reef point—lies in the bight between the latter and the village of Joggin Mines—the bight has depths of 3 fathoms extending from it for about a mile.

Breakwater.—A breakwater is built out from Joggin Mines.

Light.—On breakwater, a white, square, wood tower, supported on four steel columns, shows from 32 feet above high water, a red fixed light.

Village of Joggin Mines.—Is a mining village, and has post and telegraph offices—is a terminal of the Maritime Coal Railway and Power Co., Joggin Mines to Maccan, N.S. Population in 1921 was 1,732.

Shipping.—During the fiscal year 1921-22, 42 vessels, register tonnage 3,401 entered and cleared the port.

Kingsport, N.S.—on Minas basin west shore—is $2\frac{2}{10}$ miles NE. of mouth of Canning river. There is a pier at Oak point, Kingsport. The channel of Canning river westward of Kingsport light is marked by dolphins.

Lights.—On Oak point pier, a white, square, wood tower shows from 27 feet above high water, a white fixed light. On Porter point, south side of entrance to Canning river, a white, square, wood tower on piles shows 29 feet above high water, a red fixed light.

Supplies.—Ordinary ships' supplies are obtainable.

Communication.—Postal and telegraph is a terminus of the Cornwallis Valley branch of Dominion Atlantic railway.

Dominion Atlantic Railway SS. line between Wolfville and Parrsboro calls daily.

Shipping.—During the fiscal year 1921-22, 52 vessels, register tonnage 9,683 entered the port; 54 vessels, register tonnage 9,770 cleared.

Lahave Harbour, N.S.—southeast coast is at the mouth of the Lahave river and protected from the SE. by a group of islands of which East and West Spectacle are the northernmost.

West Ironbound island forms the east entrance of the harbour, and Mosher island immediately south of the Spectacles, the west entrance. Vessels from the south or west enter between these two islands. French rock lies between Mosher and East Spectacle islands.

Anchorage.—With westerly winds there is good anchorage in 5 fathoms north of Mosher island and east of French rock.

With easterly winds vessels under 14 feet draught will find sheltered anchorage in $3\frac{1}{2}$ to 4 fathoms between French rock and Mosher ledge to the west.

There is also good anchorage in $3\frac{1}{2}$ fathoms, one-third of a mile NW. of West Spectacle island.

Lights, Buoys, etc.—For a description of lights, buoys, and other aids to navigation in the harbour and approaches, and further hydrographic information, see 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," pages 182 to 184 inclusive, covering chart No. 342, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions.—To anchorages, see 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," page 184, covering chart No. 342.

Wharves.—There are several wharves in the harbour for landing and discharging freight, two of them have freight sheds at outer ends, and all large stores at inner ends, with 22 feet of water at some of the wharves. From the narrows between Fort and Krout points, 2 cables apart, the Lahave river trends in a general NW. by W. direction for 10 miles to the town of Bridgewater, which has rail and telegraph connection with the general systems, and a number of wharves including the railway wharf at which vessels drawing 16 feet can lie.

Population in 1921: 3,147.

Three miles up the river from Fort point, Bachner Bros. have a good wharf and shipyard where vessels of moderate size are built and repaired.

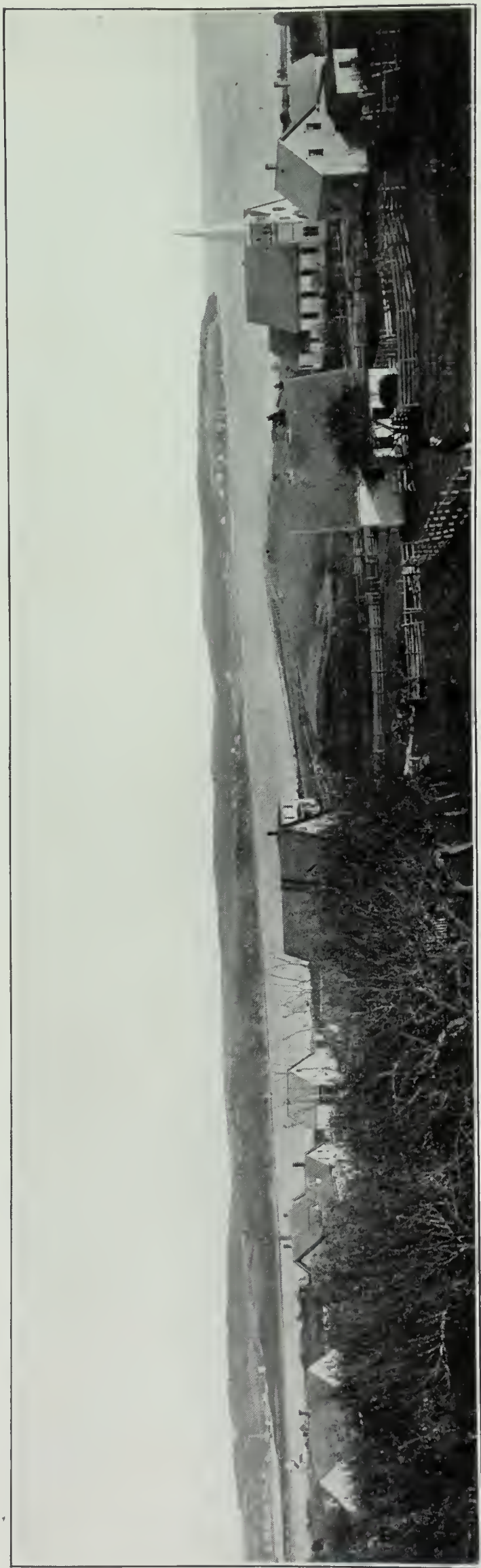
Port Charges.—A Harbour Master, and usual port charges.

Shipping.—During the fiscal year 1921-22, 265 vessels, register tonnage 31,377, entered the port; 291 vessels, register tonnage 35,113, cleared.

Liscomb Harbour, N.S.—SE. coast—Liscomb island, 2 miles long, lies at the mouth of and protects Liscomb harbour which is entered between the island and Liscomb point to the SW., about $\frac{3}{4}$ of a mile apart. Smoke point, 8 cables northward of Liscomb point, is the eastern point of the peninsula forming the south side of Liscomb harbour, and from between Smoke point and Pye point, $12\frac{1}{2}$ cables to the NW., the harbour runs in a westerly direction for nearly 4 miles to two islands near the head.

At $2\frac{1}{2}$ miles inside Pye point, the channel is considerably narrowed by rocky shoals extending from the north shore, the channel passes north of the two islands already mentioned, for 4 cables. with width of 1 cable, and least depth of 15 feet to the mouth of the Liscomb river flowing into the harbour from the northward.

The harbour is a roomy and excellent one, practically landlocked and fairly smooth at all times.



Lahave, N.S.

On north side of harbour just inside Pye point, a large indentation called Spanish Ship bay runs in a NE. direction, but it is encumbered with rocks and islands.

Anchorage.—The best anchorage is in $4\frac{1}{2}$ fathoms, mud, 8 cables westward of Pye point.

Light.—On Cranberry point, SW. extreme of Liscomb island, a white, octagonal, reinforced concrete tower, shows 72 feet above high water a white and red flashing light. Hand fog horn operated in connection with this light-house.

Buoys.—For description of buoys and rocks and shoals in approaches to Liscomb harbour, see 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," pages 74 and 75, covering chart No. 2769, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Supplies—Water.—Small supplies of fresh provisions are obtainable at Liscomb, and good water from a brook on the south shore.

Storm Signals.—Are hoisted from a station at the head of Liscomb harbour.

Communication.—Postal and telegraph—ss. *Dufferin of Sherbrooke*, Halifax Line, calls once a week.

Lloyd's Agent.—Jas. Hemlow.

Liverpool Bay Harbour, N.S.—south coast, forms the estuary of the Mersey river. The entrance points $1\frac{1}{4}$ miles apart are Eastern head on the north and Moose point on the south—from the centre of the line joining these points the harbour trends westward $2\frac{1}{2}$ miles to its head. Herring cove on north side of harbour near the head, has anchorage for light draught vessels in 2 fathoms. The bay is open all year.

Depths.—At the entrance points the depth is 10 fathoms gradually decreasing to the head. Vessels drawing 15 feet can anchor in Herring Cove, and over 15 feet, with off-shore winds, in the bay in 4 to 6 fathoms.

Off Fort point on south shore the head of the harbour has been dredged allowing 18 feet of water to be carried to the wharves.

Lights—Buoys.—For description of lights, buoys, and other aids to navigation in Liverpool bay and approaches, see 1921 Admiralty "Nova Scotia (SE. coast) and bay of Fundy Pilot," pages 189 to 191 inclusive, covering chart No. 341, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—for entering Liverpool bay, see 1921 Admiralty "Nova Scotia (SE. coast) and Bay of Fundy Pilot," page 191, covering chart No. 341.

Tides.—Rise springs 8 feet, neaps 5 feet.

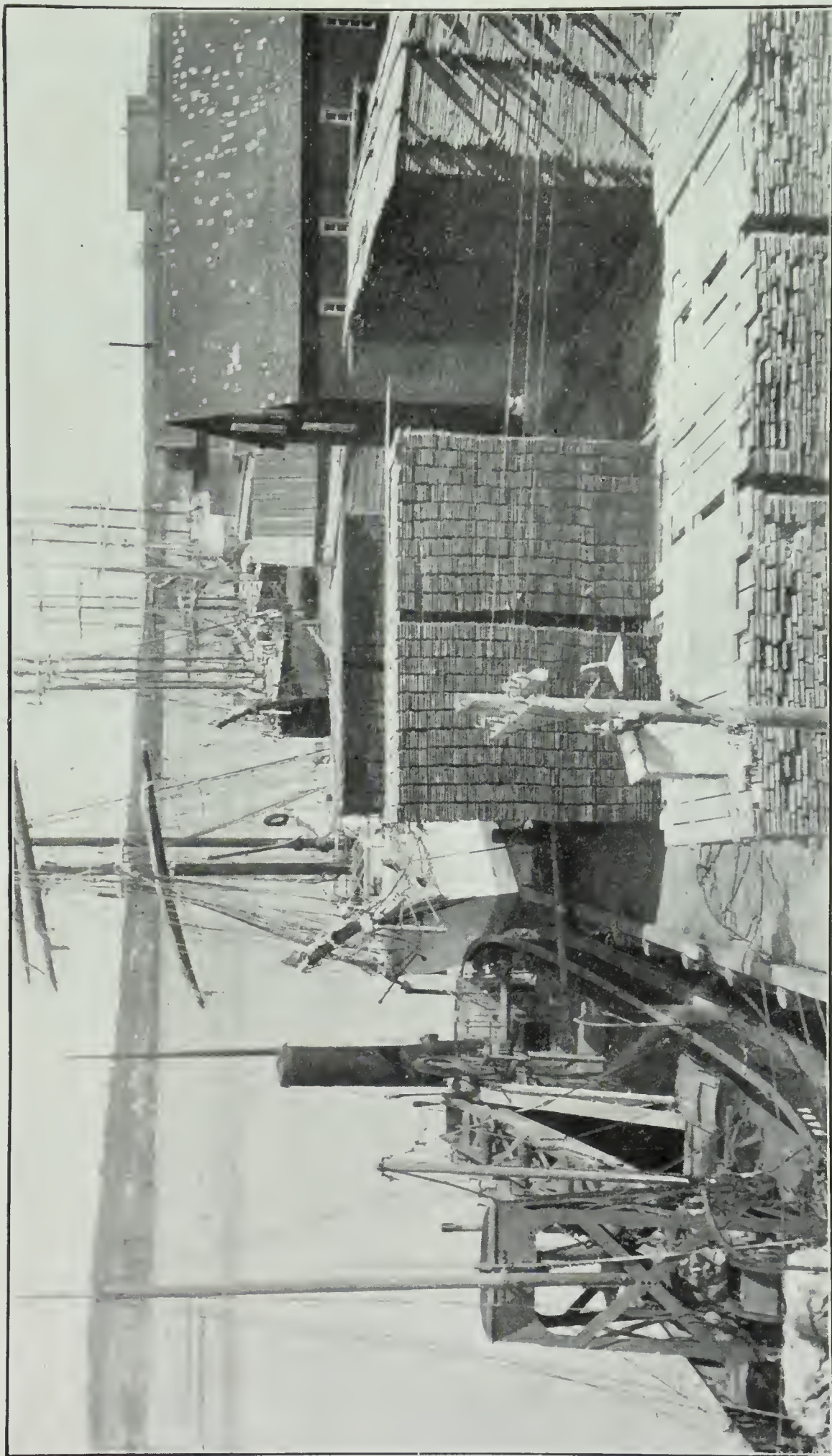
Port Charges.—Are Harbour Master's dues paid twice a year, and sick mariners' dues three times a year if not paid elsewhere—wharfage \$1 per day.

Wharves.—There are about 15 wharves which with the space occupied by their buildings comprise an area of about 168,000 square feet.

There is a large coal wharf where coal can be loaded or bunkered.

The Liverpool and Milton Co. have a line along the water front and cars are taken to ship's side.

Railway lines are laid to the wharves.



Liverpool, N.S. Harbour and Water Front.

Supplies.—Labour, stores, provisions and water can always be procured.

Storm Signals.—Are hoisted at Liverpool.

Tug.—Stevedores and a large tug can be obtained.

Repairs.—The Liverpool Electric Marine Railway affords repairs to moderate sized ships.

Patent Slip.—There is a patent slip at Liverpool, extreme length 450 feet, length of cradle 120 feet, lifting power 400 tons.

Communication.—Postal and telegraph—and a station on Halifax and Southwestern road, also steamboat connection with Halifax and St. John, N.B.

The Town.—Of Liverpool, at the head of the bay has an extensive trade with Halifax, United States, and West Indies; a large amount of pulpwood is shipped, besides lumber, cordwood, fish, and farm produce—had in 1921 a population of 2,294.

Trade.—For the fiscal year 1921-22, value of exports \$291,468; of imports \$41,361.

Shipping.—During the fiscal year 1921-22, 368 vessels, register tonnage 31,416 entered the port; 369 vessels, register tonnage 30,179 cleared.

Lloyd's Agent.—A. W. Hendry.

Lockeport Harbour, N.S.—South coast—has as its entrance points Black point on the NE. and Western head on the SW. about $3\frac{1}{3}$ miles apart. It is chiefly used by fishing vessels which if not drawing more than 15 feet, find good anchorage in 4 fathoms. The approaches to Lockeport harbour are sown with dangers. Gull rock on which is a lighthouse lies off the middle of the harbour entrance and $2\frac{1}{2}$ miles northward of the lighthouse on the north end of Locke island is the village of Lockeport. The approach to Lockeport is by a buoyed and dredged channel 200 feet wide which carries 15 feet at low water to the wharves and the channel and turning basin in front of the wharves has the same depth.

Lights—Buoys.—For description of lights, buoys, etc., in harbour and approaches, and further hydrographic information, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot", pages 198 to 202 inclusive, covering chart No. 340, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—See 1921 Admiralty "Nova Scotia (southeast coast) and bay of Fundy Pilot" page 202, covering chart No. 340.

Tides.—Springs rise $7\frac{1}{2}$ feet, neaps 6 feet.

Port Charges.—Harbour master's and sick mariners' dues.

Village of Lockeport.—On north side of Locke island is a fishing village with a population of about 600; it has post and telegraph offices; the nearest railway station is at Allendale, 3 miles NE. of Lockeport on west side of inlet; a steamer plies between the station and Lockeport.

Trade.—For the fiscal year 1921-22, value of exports \$92,943; of imports \$23,106.

Shipping.—During fiscal year 1921-22, 139 vessels register tonnage 7,398 entered and cleared the port.

Lloyd's Agent.—W. McMillan.

Lunenburg Harbour, N.S.—southeast coast, is at the head of Lunenburg bay. The entrance points of the harbour are Battery point on the east and Moreau point on the west. The entrance points are a little less than 1 mile apart and the depth of the harbour from between the entrance points to Lunenburg is about 1 mile; within these limits there is well sheltered anchorage for vessels of moderate draught in $2\frac{3}{4}$ fathoms, mud.

Harbour Regulations.—No vessel within the limits of the port shall be anchored so as to swing at her anchors nearer to any wharf than three-quarters of a cable, excepting for the purpose of going alongside or leaving a wharf, or in



Lunenburg Harbour, N.S.

moving from one wharf to another, and then is not to remain any longer than is necessary for such purpose, unless from stress of weather or other unavoidable cause, to be judged by the Harbour master.

All vessels anchored for the purpose of being laid up on the western side of the harbour must be anchored so as not to swing to the eastward of an imaginary line from the point of Selig's head to the western corner of Lindsay's wharf, and all vessels anchored for the purpose of being laid up on the eastern side of the harbour must be so anchored as not to swing to the westward of an imaginary line from the willow trees on Battery point to the eastern corner of Fincks wharf.

Light.—On Battery point a white square tower shows from a height of 81 feet above high water a red fixed light. A hand fog horn is connected with the light.

Buoys.—A shallow bank extending $1\frac{1}{2}$ cables southward from Battery point is marked by a red conical buoy.

A black can buoy marks SE. side of Moreau point spit.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot”, page 180, covering chart No. 343.

Wharves.—are the railway wharf 600 feet long with two railway tracks. Robin, Jones and Whitmans Company's (formerly Atlantic Fish Company's) two wharves 300 feet long by 35 feet wide, railway siding, five warehouses, fish drier. Acadia Supply wharves (formerly owned by A. H. Anderson) 2 wharves, 350 and 300 feet long and 40 and 31 feet wide respectively, railway passes the property, stores for coal, cement, fish and supplies of all kinds. Messrs. Zwicker and Company, two wharves 300 feet long by 40 feet wide, seven warehouses.

Lunenburg Outfitting Co. (formerly owned by James Eisenhauer) two wharves, one 300 feet long the other 100 feet, Messrs. Adams & Knickle wharf, 350 feet long by 45 feet wide, supplies of all kinds, and fish drier.

Lunenburg Coal and Supply Co. (formerly owned by J. B. Young), two wharves each 300 feet long and 35 feet wide, and three large warehouses.

Tow boat owned by Capt. George Naas, the wharf 120 feet long and 30 feet wide. W. C. Smith, two wharves, 200 feet long and 35 feet wide and 150 feet long by 100 feet wide, two warehouses, supplies of all kinds and water can be easily obtained.

Port Charges.—are harbour master's and sick mariners' dues.

Supplies.—of all kinds can be easily obtained, water is supplied by a hose from dock and lighters.

Communication.—There is a telegraph station and the town is connected with the Intercolonial by the Halifax South Western road and is the terminus of a road connecting the Annapolis valley with the South coast of Nova Scotia. Is connected with the general Railway systems of the Dominion via Bridge-water and Middleton.

A railway siding passes along the head of all wharf properties.

Hospital.—There is a marine hospital for sick seamen.

Patent Slip.—There is a marine slip of 1,000 tons capacity, and tug 500 tons capacity and repairs can be quickly made. Next to the marine slip is Smith and Rhulands shipyard.

The Town.—built on the north side of the harbour, had in 1921 a population of 2,792, the principal industries are fishing, shipbuilding and making of engines, launches and furniture.

Trade.—For the fiscal year 1921-22, value of exports \$783,556; of imports \$219,919.

Shipping.—During the fiscal year 1921-22, 708 vessels, register tonnage 63,408 entered the port; 762 vessels, register tonnage 69,191 cleared.

Lloyd's Agent.—A. H. Zwicker.

Mahone Harbour, N.S.—on west side of Mahone bay affords secure and well sheltered anchorage in 6 fathoms; there are numerous off-lying dangers.

The entrance to the channel leading to Mahone harbour and Princes inlet lies between Hobson island on the south and Haddock shoal on the north.

Buoys—Beacons.—The approach to the harbour is buoyed, and there is a beacon on a shoal just below the wharves.

Lights.—On Hobson island a white square wooden tower shows from a height of 68 feet a red occulting light.

On Westhaver island a white square wooden tower, red iron lantern, shows at a height of 54 feet a white occulting light.

Tides.—rise $7\frac{1}{4}$ feet at springs, and 6 feet at neaps.

Port Charges.—are harbour and sick mariners' dues.

Wharves.—There are 6 wharves in the harbour, one of which has at its head 16 feet at low water.

Shipyards.—There are three yards where vessels are built for the fishing industry and for the coasting trade.

Supplies.—Ships' supplies are obtainable.

Communicaton.—There is steamer connection with Lunenburg, and the town is connected by rail and telegraph with the Dominion systems.

The Town.—has an hotel, saw and planing mills. Lumbering, fishing and shipbuilding are carried on. Population about 1,600.

Shipping.—During the fiscal year 1921-22, 54 vessels, reigster tonnage 3,493, entered the port; 57 vessels, register tonnage 3,790, cleared.

Maitland Harbour, N.S.—lies on south shore of Cobequid bay, at the mouth of Shubenacadie river—about $1\frac{3}{4}$ miles SE. of Salters head.

Shubenacadie river is navigable for boats at low water for 13 miles from Maitland to within 2 miles of the Canadian National Railway bridge and town of Shubenacadie; and $4\frac{1}{3}$ miles south of Maitland the river is spanned by the bridge of Dominion Atlantic Railway, from Windsor to Truro.

Light.—On Government wharf at Maitland, a mast shows 24 feet above high water, a white fixed light.

Ferry.—From Maitland a ferry crosses to Lockherd's point, opposite, on east bank of river.

Wharves.—There are 2 wharves in Maitland harbour, one government and one private with 27 feet of water alongside at high water neaps.

Village of Maitland.—At mouth of Shubenacadie river on the west bank—has post and telegraph offices, and a stage coach runs to Shubenacadie. The nearest railway station is at South Maitland on the Dominion Atlantic line, $4\frac{1}{3}$ miles distant.

Shipping.—During the fiscal year 1921-22, 20 vessels, register tonnage 2,226, entered and cleared the port.

Margaretville, N.S.—is on the south coast of the bay of Fundy, $4\frac{1}{2}$ miles NE. from Port George, it has a small breakwater.

Margaretville bank with 2 feet least water near the east end lies $\frac{1}{2}$ a mile from the shore and parallel to it. Between the west end of the bank and the breakwater is a channel with depth of 3 fathoms.

Anchorage.—In $5\frac{1}{2}$ fathoms sand may be had between the bank and the shore.

Ice—Tides.—The tide rises and falls in the vicinity 32 feet springs, 28 feet neaps.

Owing to the constant rise and fall of the tide not much ice remains in the harbour, which is usually open the year round.

Light.—On extremity of point, south of breakwater is a square wooden tower with black and white bands, showing a group occulting white light at a height of 30 feet.

Port Charges.—There is a harbour master, and charges are collected under the Dominion Regulations for the Government of Harbours.

Communication.—The place is connected with Middleton station by a branch line, whence connection is had with the general system.

A steamboat service is maintained between Margaretville and St. John.

Shipping.—In the fiscal year 1921-22, 91 vessels, register tonnage 6,229, entered the port; 92 vessels, register tonnage 6,376, cleared.

Mary Joseph Harbour, N.S.—SE. coast—is protected from the southward by a group of islands of which Hawbolt island is the northernmost, and is practically land locked, and roomy and secure.

It has an east and west entrance, but the channels are narrow and should not be attempted by vessels drawing more than 9 feet without a pilot. The approaches particularly that from the west are intricate and sown with dangers.

Wharves.—There is one private wharf and a small lobster factory in the harbour.

Mary Joseph Settlement.—is scattered along the shores of the harbour, there is a church, post and telegraph offices, and 2 stores. The ss. *Dufferin*, of the Sherbrooke and Halifax SS. Line calls weekly. The chief industry is fishing.

Merigomish Harbour, N.S.—North coast. The outer entrance points of the harbour are King head and Merigomish point, the west point of Merigomish island, about $\frac{3}{4}$ of a sea mile apart, there is 14 feet at low water over the bar, and good depths inside for large draught vessels, but the harbour is difficult of entrance and should not be attempted without local knowledge in northerly winds.

From the outer entrance points the harbour trends southward for about 1 sea mile to the inner entrance between Savage point SW. end of Merigomish island, and Betty point, east end of Olding island, about $\frac{1}{4}$ of a mile apart, with navigable breadth of $\frac{1}{2}$ cable. It then runs 5 miles eastward within Merigomish island to a sand bar joining the latter with the mainland, and also 4 miles SW. up a bay—full of islands and coves.

French river flows into the harbour south of east end of Olding island.

Tides.—Springs rise $5\frac{1}{4}$ feet, neaps $3\frac{1}{4}$ feet.

Pier.—In a cove east of Hardwood point which is about 11 cables east of the inner entrance to the harbour is a pier, 254 feet long, with a depth at its outer end of $6\frac{1}{2}$ feet at high water about 1 mile from Merigomish station on the Intercolonial railway.

Supplies.—Provisions are obtainable.

Merigomish Village—is connected by rail with New Glasgow about 10 miles distant, has a population of about 500, engaged in salmon, lobster and smelt fishing.

Meteghan Harbour, N.S.—is on east side of St. Mary bay near its mouth. The anchorage in the harbour is in from 4 to 5 fathoms, sand and clay. The harbour is open practically all the year round.

Wharves.—One government wharf with depth of water alongside 20 feet and 2 other wharves, with 15 feet at spring high tides, and having 3 sheds for merchandise.

Breakwater.—At the mouth of the Meteghan river flowing into the harbour is a breakwater, its outer end dry at low water.

Light.—At the extreme end of breakwater a tower with vertical red stripes on seaward side, and black lantern, shows from a height of 23 feet above high water a fixed green light.

Port Charges.—Harbour and wharfage dues.

Communication.—There is a railway station at Meteghan $2\frac{1}{3}$ miles inland from the river mouth, which connects with the general systems.

Shipping.—During the fiscal year 1921-22, 35 vessels, register tonnage 1,469 entered the port; 34 vessels, register tonnage 1,385 cleared.

Musquodoboit Harbour or Inlet, N.S.—southeast coast, $1\frac{1}{2}$ miles NW. of Jeddore head, contains many islands and is navigable for small vessels for 7 miles to the mouth of Musquodoboit river—at its head.

Northward of the bar with depth of 10 feet, a channel $1\frac{1}{4}$ cables wide has depths of 3 to 4 fathoms. About 4 miles north of the bar it becomes very narrow and from 7 to 8 feet deep, but small vessels can ascend to head of inlet at high water.

Fourteen spar buoys red and black mark the harbour channel.

Lights—Buoys.—For description of lights and buoys in Musquodoboit harbour and approaches and further hydrographic information, see 1921 Admiralty "Nova Scotia (SE. coast) and bay of Fundy Pilot", pages 116 and 117, covering chart No. 2439, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions.—See 1921 Admiralty "Nova Scotia (SE. coast) and Bay of Fundy Pilot", page 117, covering chart No. 2439.

Port Charges.—Harbour Master, and usual port charges.

Wharves.—At Ostrea pond on north shore of inlet inside Jeddore head, is a government wharf.

Robin, Jones and Whitman have a private wharf and salt fish plant adjoining the government wharf.

There is another government wharf, 6 miles further up the harbour.

Communication.—The village at the head of the harbour has postal and telegraph connection with the rest of the Dominion and is a station on Musquodoboit branch of Nova Scotia division of Canadian National Railways.

Negro Harbour, N.S.—south coast—is the upper part of an inlet, the entrance points of which are East point on the NE. and Green point on the SW., $4\frac{1}{2}$ miles apart. Cape Negro island, $2\frac{2}{10}$ miles long in a NW. and SE. direction, lies in the middle of the entrance, from which the inlet runs in a NW. direction $5\frac{1}{2}$ miles to its head and mouth of Clyde river. The harbour may be entered on either side of Cape Negro island—there are a number of rocks and shoals on either side of Cape Negro island entering the harbour particularly on the SW. side.

North East harbour the SE. part of Negro harbour lies between East point and John point $2\frac{1}{10}$ miles to the NW. From the entrance—it runs in a northerly direction for $1\frac{3}{4}$ miles with depths of from 3 to $1\frac{1}{2}$ fathoms. The channel in the harbour is buoyed.

Depths.—In the entrance NE. of Negro island the depths are from 14 fathoms to 4 fathoms at NE. end of island. In the SW. entrance the depths are from 10 to 4 fathoms—between Cape Negro island and Davis island near the harbour head the depths are from 5 to $3\frac{1}{2}$ fathoms.

Anchorage.—The best anchorage in Negro harbour is in $3\frac{1}{2}$ fathoms— $1\frac{1}{4}$ miles NW. of back leading light, 3 cables westward of Johns point. There is also good anchorage in North East harbour for fishing and coasting vessels, where there are wharves with 15 feet alongside.

Lights—Buoys.—For description of lights and buoys in Negro harbour and approaches and further hydrographic information, see 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot”, pages 208 to 210 inclusive, covering chart No. 340, also Department’s 1923 “List of Lights on Atlantic Coast”.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and bay of Fundy Pilot” pages 210 and 211, covering chart No. 340.

Tides.—Springs rise 7 feet, neaps $5\frac{3}{4}$ feet.

Supplies.—Ordinary ships’ supplies and water are easily obtained.

Life-Boat.—There is a life-boat station at Blanche, on west side of harbour near Green point.

Communication.—Postal and telegraph—there is a railway station at Port Clyde at the head of the harbour to which a channel is dredged and buoyed.

Shipping.—During the fiscal year 1921-22, 100 vessels register tonnage 5,550 entered and cleared the port.

Noel Bay, N.S.—on the south shore of Cobequid bay, basin of Minas, lies between Noel head on the east and Burntcoat head on the west. The bay is about $1\frac{1}{2}$ miles wide at its mouth and about $\frac{1}{2}$ mile deep, and is dry at low water. There is a pier in the SW. corner, from which lumber is shipped.

Lights.—On NW. extreme of Burntcoat head, a white, square, wood tower shows from a height of 76 feet above high water a white fixed light.

On outer end of Noel bay pier, a square, wood tower, upper part white, shows from a height of 76 feet above high water a white fixed light.

Ice.—The harbour usually closes about the end of December and is open by about the end of March.

Tides.—Mean range 44·2 feet.

Port Charges.—Harbour master, and usual port charges.

Pilotage.—Non-compulsory.

Supplies.—Ordinary provisions can be obtained.

Noel Village.—Situated half a mile south of the pier, has post and telegraph offices. The nearest railway station is Kennetcook, 8 miles south by carriage road. Freight steamers call every two weeks, and trading schooners occasionally.

North-west Cove, N.S.—south coast, is an exposed anchorage in 6 to 7 fathoms, on west side of St. Margaret bay, 1 mile northward of Owls head. Horse island lies in the mouth of the cove.

Supplies.—None save pure water, merely a fishing station.

Communication.—A post office but no telegraph office.

Parrsboro Harbour, N.S.—is at the head of an indentation in the bay of Fundy, 3 miles eastward of cape Sharp, at the mouth of the Parrsboro river. The outer and inner harbour is dry at low water, but as the neap rise of tide is over 37 feet, vessels of considerable draught can reach the wharves except at low or near low water. Large vessels load at West bay between cape Sharp and Partridge island, a distance of about 4 miles. Lumber is carried out to large vessels by schooners.

Lights.—On the southern extremity of cape Sharp a white square wood tower, with dwelling attached, shows from a height of 60 feet above high water, a white occulting light, attached is a diaphone fog alarm 225 feet, 317°, from the lighthouse.

At entrance to harbour, a white octagonal wood tower shows from a height of 37 feet above high water, a white fixed light; a diaphone is operated at this station.

Directions.—See 1921 “Admiralty Nova Scotia (southeast coast) and Bay of Fundy Pilot”, page 267, covering chart No 353.

Wharves.—The wharf accommodation is about 300,000 square feet, all reached by rail. At the outer end of the Government wharf a light elevated 24 feet is shown from the corner of the freight shed.

In addition to the government wharf and several private wharves, there is a pier for shipping coal, owned by the Cumberland Railway and Coal Company, 1,000 feet long by 40 feet wide at the head, with depth at outer end at high water neaps of 28 feet. Rails are laid to all wharves and pier.

Tides.—In the bay springs rise 45 feet, neaps 35 feet.

Port Charges.—Harbour master's and sick mariners' dues.

Pilotage is compulsory.

Storm Signals are hoisted at Parrsboro at head of inner harbour.

Repairs.—There is a slip capable of repairing vessels up to 1,500 tons.

Coal and Supplies are easily obtained.

Communication.—Parrsboro is connected by rail and telegraph with the general systems.

The Town.—Has saw mills, factories, and a repairing slip. The chief shipments consist of coal, leather, fish, and lumber. Population in 1921: 2,748.

Trade.—For the fiscal year 1921-22, value of exports \$488,097; imports \$8,203.

Shipping.—During the fiscal year 1921-22, 805 vessels, register tonnage 73,179 entered the port; 817 vessels, register tonnage 72,614 cleared.

Lloyd's Agent.—E. Gillespie.

Pictou Harbour, N.S.—North coast, is entered from Pictou road whose entrance points are McKenzie head and Logan point about $1\frac{3}{4}$ miles apart, over a bar about $1\frac{1}{2}$ miles from the entrance of the road, running from a sandy spit on the south to Loudon beach on the north; the road although open to NE. winds affords good anchorage 5 fathoms clay and mud.

The width of the bar between Loudon beach and the sandy spit to the south of it is about $2\frac{1}{4}$ cables, 4 cables to the east of the end of the spit it is still narrower. The least water on the bar is 19 feet at low water and inside it the depth increases to 5 and 7 fathoms.

From the bar the harbour extends in a general SW. direction with a width of 1 to 2 cables between the 4 fathom contours—to oposite the town on the north side of the harbour.

Immediately opposite the town on the south side the harbour expands into the mouths of East, Middle and West rivers.

East river is navigable for $2\frac{1}{2}$ miles from Pictou to the railway terminus from the Albion mines. The other two are seldom used.

The harbour is the best on the south shore of the gulf, eastward of Gaspé, and is important from the coal mines, building stone quarries, and settled country in its vicinity.

Lights—Buoys.—For a description of lights and buoys in Pictou road and harbour, and further hydrographic information see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 201 to 204 inclusive, covering chart No. 2034, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions.—For entering Pictou road and crossing Pictou bar, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 202 and 204, covering chart No. 2034.

Tides.—Springs rise 6 feet, neaps 4 feet.

Ice.—The harbour is usually closed about 26th of December and clear of ice by the 18th of April.

Port Charges.—Are harbour master's and sick mariners' dues. Port warden's dues when surveys are made, and wharfage dues.

Pilotage.—Is under the Pictou Pilotage authority and payment is compulsory. Half rates are charged if a vessel is spoken in the district and refuses a pilot. The rates are: vessels of 80 to 140 tons, \$6 inwards, \$4 outwards; 140 to 200 tons, \$10 inwards, \$6 outwards; 200 to 300 tons, \$12 inwards, \$8 outwards; 300 to 400 tons, \$14 inwards, \$9 outwards; 400 to 500 tons, \$15 inwards, \$10 outwards; 500 to 600 tons, \$16 inwards, \$11 outwards; 600 to 700 tons, \$17 inwards, \$12 outwards; 700 to 800 tons, \$18 inwards, \$13 outwards; 800 to 900 tons, \$19 inwards, \$14 outwards; 900 to 1,000 tons, \$20 inwards, \$15 outwards; 1,000 tons

and upwards, $2\frac{1}{2}$ cents inwards and 2 cents outwards per ton. Docking and moving vessels from anchorage in harbour, \$4.

Wharves and Piers.—The Canadian National Railway running along the water front to the east end of the town, has 3 loading piers, one of them 500 feet long, with 26 feet alongside. On the largest pier is a shed for general merchandise. All three piers have rail connection.

At the Marine and Fisheries wharf there is 14 feet alongside, a marine railway adjoins the railway property where vessels up to 1,400 tons can be hauled up, and repairs made. A foundry and machine shop adjoins the railway property.

On the south side of the harbour at Pictou landing a branch line from New Glasgow runs to a pier with 28 feet alongside; a little less than $\frac{3}{4}$ of a mile to the NE. the Acadia Coal Co. operate a pier 400 feet long for loading coal from chutes, with 26 feet alongside for ships at low water springs.

On the south side opposite the town at Abercrombie point the Intercolonial Coal Co. operate a pier 400 feet long with 20 feet alongside at low water springs.

Ferry.—From the wharf at the place known as Pictou landing a steam ferry boat plies at alternate hours to and from Pictou.

Storm Signals.—Are exhibited at Pictou.

Repairs.—Large repairs to hull or machinery can be executed, and divers may be hired.

Supplies.—Meat, bread, and vegetables are purchaseable. Water may be obtained from a steam water tank. The best watering places are on the southern shore of the harbour, three-quarters of a mile within its mouth, and opposite the coal-loading place in East river.

Coal.—There is an unlimited supply of native coal at Pictou. Vessels coal from lighters or at the ends of the wharves.

Labour is plentiful, and 4,000 tons of coal can be put on board a vessel in 24 hours. Vessels unable to cross the bar can be coaled outside by lighters.

The trade in coal has greatly developed; the harbour is generally crowded with shipping, and there are several coaling stations in each of three rivers.

Communication.—There are stations of branches of the Intercolonial railway at Pictou and New Glasgow, which also have telegraphic communication. Steam vessels of the Quebec Steamship Company leave Pictou fortnightly for Quebec and Montreal, calling at Charlottetown, Summerside, Perce, Gaspe, and Father point. Steam vessels leave Pictou on Mondays and Thursdays for Magdalen islands, calling at Souris. The Thursday steamer also calls at Georgetown.

A steam vessel leaves Pictou every Monday night for Cheticamp, calling at Port Hood, Inverness (Broad cove), Margaree, Grand Etang, and Pleasant bay, Cape Breton island.

Wireless Telegraph.—A wireless telegraph station is established at Pictou on a hill north of the town; it is in operation only from December to April, during which period it is available day and night, primarily for communication with the Prince Edward island winter ferry; the call letters are V.C.Q. Weather forecasts are received at 10 p.m. and transmitted to ships on request.

Quarantine and Hospital.—Pictou is a minor quarantine station, and a marine hospital is maintained there.

The Town.—On the north shore of the harbour, is well built, has good stores, several hotels, branch banks, factories, lumber yards, marble works, and other industries. Also the famous Pictou Academy, library, masonic hall, and various churches. The Custom house, a brick building with square tower, is on Town point. The Roman Catholic church red brick with spire to east of town is very conspicuous.

Population in 1921: 2,988.

In 1920, Pictou had 29 industrial establishments employing 449 hands, total value of manufactures, \$1,499,329.

Trade.—For the fiscal year 1921-22, value of exports \$325,684; of imports \$138,051.

Shipping.—During the fiscal year 1921-22, 562 vessels, register tonnage 67,753, entered the port; 562 vessels, register tonnage 69,082, cleared.

New Glasgow.—On the east side of East river, about $8\frac{1}{2}$ miles from Pictou as the crow flies is an important town with extensive coal mines in the vicinity.

Population in 1921: 8,974.

Had in 1920, 79 industrial establishments employing 2,610 hands, total value of manufactures, \$18,730,554.

Trade.—For the fiscal year 1921-22, value of imports \$370,269; exports not given.

Shipping.—During the fiscal year 1921-22, 85 vessels, register tonnage 2,175, entered and cleared the port.

Lloyd's Agents.—Primrose Brothers.

Pomquet or Bayfield Road and Harbour, N.S.—NE. coast—is on south shore of George bay, Pomquet or Bayfield island $4\frac{1}{2}$ cables long north and south lies 3 cables NE. of Pomquet point, and Pomquet road is in the bay to the southward between Pomquet point and Little river about 1 miles to the southward of it.

The road is sheltered by Pomquet island and its reefs, except from between north and east, Bayfield breakwater, 700 feet long, runs along the reef off Pomquet point, and Bayfield wharf $\frac{1}{4}$ of a mile south of Pomquet point, is 442 feet long in a SE. direction, and has depth of 11 feet at low water at its outer end.

The entrance to Pomquet harbour is at the eastern end of a sand beach $1\frac{3}{16}$ miles westward of Pomquet island light, and in the bay between it and Monk head, $3\frac{3}{4}$ miles, NW. of the light.

Over the shifting bar at the mouth of the channel leading into the harbour there is only 2 feet depth at low water.

Inside the bar are depths of from 10 to 12 feet in the channel between the flats for more than 2 miles in from the sea. The harbour is extensive, branching out at the southern and western ends into 2 large coves or inlets.

Light.—On NE. end of Pomquet island, a white, square, wood tower shows, 50 feet above high water, a red fixed light.

Tides.—Springs rise 4 feet, neaps $2\frac{1}{2}$ feet.

Directions.—See 1916 Admiralty "St. Lawrence Pilot" Vol. 2, page 152, covering chart No. 2032.

Pomquet Settlement.—The principal settlement and church is on the west side of NW. arm of the harbour. The Pomquet river flows into the head of the SE. arm where there is an Indian reservation and chapel. There are post and telegraph offices, and a station on eastern extension of N.S. division of Canadian National Railways, New Glasgow to Mulgrave.

Port Latour, N.S.—South coast—is an inlet, the entrance points of which are Green point on NE. and Baccaro point on SW. 3 miles apart. From centre of entrance the harbour trends northward $5\frac{1}{2}$ miles to the head where it is joined to Negro harbour by a boat channel.

Two villages, Port Latour and Upper Port Latour, on the west shore, are $2\frac{1}{2}$ miles and $4\frac{1}{2}$ miles respectively from Baccaro point.

John's island lies in the centre of the inlet opposite upper Port Latour, and the best anchorage is between John's island and the mainland of Green point peninsula to the eastward in 3 fathoms.

The harbour is open to the south and only used by fishing vessels, depths within the harbour proper are from 14 to 15 feet over a considerable area. The harbour is open the year round.

Lights.—On Baccaro point, a white, square, wood tower, with black ball seaward, shows 49 feet above high water, a white fixed group flashing light.

Hand fog horn in connection with light.

On Page islet east end, $2\frac{7}{10}$ miles NE. of Baccaro point, a white square, wood tower shows 46 feet above high water a white fixed light.

Hand fog horn in connection with light.

Buoys.—For description of buoys and outer dangers in approaches to Port Latour harbour, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot" page 212, covering chart No. 340.

Tides.—Ordinary rise of tide is from 5 to 6 feet.

Wharves.—A breakwater or pier, 500 feet long, also used as a wharf, protects a portion of the harbour, depth of water 14 feet alongside at low water.

There are 4 other wharves including the government wharf with warehouse and coal shed. At all these wharves there is a depth of from 6 to 7 feet at low tide.

Port Charges.—A harbour master and usual port charges.

Communication.—Postal and telegraph, the nearest railway station is Barrington, connected with Port Latour by a carriage road.

Yarmouth and Shelburne SS. line calls twice a week.

Shipping.—During the fiscal year 1921-22, 124 vessels, register tonnage 6,941 entered and cleared the port.

Port Lorne Harbour, N.S.—On south shore of bay of Fundy, about $26\frac{1}{2}$ miles NE. of Digby gut and $1\frac{3}{4}$ miles NE. of St. Croix bay, is an indentation in the coast—with a pier. Anchorage may be had in 6 to 7 fathoms from a quarter to half a mile northward of Port Lorne pier.

Light.—On shore near inner end of pier, white, square, wood tower shows 92 feet above high water, a white occulting light.

Port Charges.—As at other Canadian ports.

Village.—Port Lorne Village ships a certain amount of agricultural produce—the inhabitants are chiefly farmers and fishermen—has post office and telegraph office—and a carriage road runs to Clarence railway station—about $3\frac{1}{2}$ miles south. Bay of Fundy and Minas SS. Co., St. John, N.B., to Margaretsville, N.S. calls.

Port Medway Harbour, N.S.—southeast coast is 6 miles westward from Indian island. Medway head is the west entrance point, and Frying Pan island, 6 cables to the eastward, and the southernmost of a group of islands sheltering the harbour from the eastward, the east entrance boundary of the harbour.

From the entrance the channel trends northward for 2 miles and then opens out to the NW. into a large shallow, and irregular basin studded with rocks and shoals. Neil's point is 1 mile north of Medway head, and $1\frac{1}{2}$ miles westward of Neil's point is a breakwater with light at outer end.

Anchorage.—With a pilot safe anchorage can be had in the harbour for vessels drawing less than 15 feet.

Lights—Buoys.—For a description of lights and buoys in Medway harbour, and further hydrographic information, see Admiralty 1921 "Nova Scotia (SE. coast) and Bay of Fundy Pilot", pages 187 and 188, covering chart No. 342, also Department's 1923 "List of Lights and Fog Signals".

Directions.—See Admiralty 1921 "Nova Scotia (SE. coast) and Bay of Fundy Pilot", page 188, covering chart No. 342.

Port charges.—Harbour master's and sick mariners' dues.

Supplies.—Ships stores can be bought at low prices.

Communication.—Postal and telegraph and a station on the Halifax and South Western road.

The Town.—Of Medway is built on the SW. side of Medway river, $2\frac{1}{2}$ miles from the breakwater; to the NW. of the town are several saw mills; lumber and fish are the chief exports. Mill village on the same side of the river is about 1 mile distant.

Port Mulgrave, N.S.—On west shore of gut of Canso, opposite Point Tupper Murray cove is the small southern cove of Port Mulgrave.

Venus cove, the northern cove of Port Mulgrave, affords excellent anchorage especially in NW. winds. The best berth is in 6 to 7 fathoms, mud, directly off the mouth of the cove.

Wharves.—Wharves with railway sidings and a railway station are on the southern side of Murray cove, and a ferry landing to which the railway ferry crosses. There are also wharves on both north and south sides of Venus cove for landing at all times of tide.

Port Charges.—There is a harbour master and the charges are harbour master's and sick mariner's dues, as provided for by Canada Shipping Act, chapter 113.

Water.—There is a good watering place in Venus cove.

Supplies.—Ordinary ships' supplies are obtainable.

Coal.—Can be delivered to vessels at Port Mulgrave wharves but there are no special facilities for service.

Port Mulgrave Village.—On south side of Murray cove has a church—post and telegraph offices, and a railway station, on Eastern extension, New Glasgow to Mulgrave of N.S. division of Canadian National Railways. At Venus cove is a settlement and small Anglican church.

North Bay S.S. Co., between Mulgrave and Pleasant bay, calls.

Hendry, Ltd., S.S. *Strathlorne*, from Halifax to Mulgrave, calls weekly.

Richmond S.S. Co. Bras d'Or lake route calls weekly.

Coastal Steamship Co. steamer from Sydney to Mulgrave calls fortnightly.

Canso line—Mulgrave to Canso, calls daily.

S.S. *Westport III*, between Mulgrave and Guysboro, calls daily.

S.S. *Arichat*, between Mulgrave and Arichat, calls daily.

Shipping.—During the fiscal year 1921-22, 1,112 vessels, register tonnage 83,505, entered and cleared the port.

Port Wade, N.S.—lies on north shore of Annapolis basin, about $1\frac{1}{4}$ miles eastward of S.E. entrance point of Digby gut. Drift ice rarely interferes with navigation owing to the rise and fall of tide.

Light.—On outer end of Government wharf, a white, square, wood tower shows 24 feet above high water, a red fixed light.

Piers—Wharves.—The government pier at Port Wade is 1,400 feet long, has depth at outer L of 28 feet at low tide, has a pier station, warehouse and siding, and is a terminal of the Halifax and South Western Railway. The Port Wade Lumber Co. have a sawmill near the pier. Wharves are: Littlewood's wharf with 12 feet alongside at high tide, and those of John Snow and J. D. Apt, used chiefly by fishing schooners.

Tides.—Springs rise $27\frac{1}{2}$ feet, neaps 22 feet.

Port Charges.—Harbour master's and sick mariners' dues, as regulated by Canada Shipping Act, chapter 113.

Repairs.—There are no repair docks, but several coves in the vicinity are suitable for beaching small vessels for repairs.

Ferry.—A ferry steamer plies to Digby in connection with trains.

Communication.—Postal and telegraph—station on Victoria Beach Section of Halifax and South Western road. Steamer connection with St. John, N.B., and other bay of Fundy ports.

Shipping.—During the fiscal year 1921-22, 14 vessels, register tonnage 721 entered and cleared the port.

Pubnico Harbour, N.S.—west coast— $2\frac{1}{2}$ miles north of St. John island, is entered between St. Ann point on the west and Beach point on the east, a mile N.E. of St. Ann point—from the entrance the harbour trends northward $6\frac{1}{2}$ miles to the town of Pubnico at the head.

Deep water can be carried in a narrow channel to the anchorage in 9 fathoms, mud, $1\frac{1}{2}$ miles above St. Ann point, northward of this the harbour is only navigable for light draught vessels, with local assistance, to $1\frac{1}{2}$ miles from the head.

The harbour is in 3 sections: Pubnico at the head, Middle Pubnico, and Lower East Pubnico at the entrance.

Light.—On Beach point a white, square, wood tower, dwelling attached, shows from a height of 41 feet above high water, a white occulting light, hand fog horn attached.

Buoys.—A black bell buoy in 6 fathoms marks the bank under 3 fathoms extending $\frac{1}{4}$ mile southward from St. Ann point. A black can buoy marks east extreme of Pubnico ledge dry at low water, the buoy is $3\frac{1}{2}$ cables NNE. from Beach point light.

Wharves.—At Lower East Pubnico are two wharves, one on each side of the harbour; there are also two wharves in the Middle harbour, one on each side.

Tides.—Rise 12 feet springs, 10 feet neaps.

Supplies.—Are available at Lower East Pubnico, and water from a spring near Meres House, on east side of harbour below Lower East Pubnico.

Port Charges.—Harbour masters' and usual port charges.

Communication.—Pubnico at the head of the harbour and East Pubnico and Lower East Pubnico on the east side are all stations on the Yarmouth section of the Halifax and South Western road; there is a telegraph office at Lower East Pubnico and a post office at East Pubnico.

Shipping.—During the fiscal year 1921-22 at Lower East Pubnico, 312 vessels, register tonnage 14,838, entered the port; 319 vessels, register tonnage 15,259 cleared.

Queensport Harbour, N.S.—east coast,—on south shore of Chedabucto bay—Rook island about 1 cable long and Rook rock off it lie in the entrance to the harbour. The harbour inside Rook island and rock is about $\frac{3}{4}$ of a mile deep and about $\frac{1}{2}$ a mile wide with depths of from 5 to 9 fathoms; there is good holding ground, but not room for many vessels in the eastern part which is the best sheltered.

The eastern channel into the harbour is between Rook island and Brodie rocks off Brodie point to the eastward, it is a cable wide and carries 23 feet of water.

The western channel between Rook island and Corveau rocks to the westward is 3 cables wide and carries 15 to 6 fathoms water.

Light.—On Rook island, a white, square, wood tower, dwelling attached, shows from 50 feet above high water, a white fixed light.

Hand fog horn operated in connection with light.

Directions.—For entering Queensport harbour, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 110 and 111, covering chart No. 2342.

Tides.—Springs rise $6\frac{1}{2}$ feet, neaps $4\frac{1}{2}$ feet.

Port Charges.—There is a harbour master, and usual port charges.

Communication.—Postal and telegraph—nearest railway station Mulgrave. Halifax and Canso SS. Co. calls once a week. SS. Westport III, between Mulgrave and Guysborough, calls daily.

River Hebert, N.S.—is entered from Cumberland basin at the east end of the bay of Fundy. The entrance to Hebert river is three quarters of a mile south of the Government wharf at Minudie village. The channel is intricate but pilots can be obtained at Woody point, Cumberland basin. The depth in the channel at low water is from 3 to 4 feet.

Wharves.—The old wharf has 80 feet frontage and 50 feet in length shorewards, and the new wharf has a frontage of 150 feet and 40 feet back, with a connection from the old wharf of 35 feet; depth of water, from 10 to 18 feet at high water. The wharf at Minudie has a frontage of 80 feet and is 100 feet long, it is used as a ferry wharf connecting Amherst Point.

Tides.—The tides at the head of Cumberland basin rise $45\frac{1}{2}$ feet springs and 38 feet neaps.

Light.—On outer end of government wharf on Minudie point is a fixed white light elevated 26 feet.

Port Charges.—There is a harbour master and the fees are the same as at other Canadian ports.

Supplies for vessels apart from coal can be obtained.

Shipping.—During the fiscal year 1921-22, 3 vessels, register tonnage 476 entered and cleared the port.

Sambro Harbour, N.S.—south coast—immediately northward of cape Sambro is about 1 mile deep, in a NE. direction with an average width between shoals off either shore of half a mile—is protected from the SW. by numerous shoals and ledges off the entrance, but the shelter is indifferent and the approach so sown with dangers that it should not be attempted by strangers, except from necessity.

Anchorage.—An islet, the isle of Man, lies in the middle of the harbour, and the best anchorage is in 6 fathoms, about 1 cable north of it.

Lights.—On west extremity of inner Sambro island, a white mast shows 45 feet above high water, a white fixed light.

On Bull point, NW. side of Sambro harbour near the head, a white, square, wood tower shows 38 feet above high water, a red fixed light.

Directions.—For description of dangers in approaches to Sambro harbour and directions for entering from southward and westward, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot", pages 143 and 144, covering chart No. 2410.

Communication.—There are post and telegraph offices in Sambro harbour—nearest railway station at Halifax.

Sandy Cove Harbour, N.S.—bay of Fundy is on NW. shore of Digby neck— $7\frac{1}{2}$ miles NE. of Boars head the NE. point of Long island it affords good anchorage for light-draught vessels in $2\frac{1}{4}$ fathoms, with SE. and SW. winds, care being taken to avoid a rock with 6 feet water, 3 cables NE. from the west entrance point.

Wharves.—There are 2 wharves in Sandy cove with 10 feet alongside at high water.

Tides.—Springs rise 23 feet, neaps 19 feet.

Settlement of Sandy Cove.—Sandy Cove is a port of entry for Little River, $3\frac{1}{2}$ miles to the SW. on SE. side of Digby neck—contains post and telegraph offices—nearest railway station is Weymouth.

St. Mary's Bay SS. Co., Weymouth to Sandy Cove, calls 3 times a week.

Shipping.—During the fiscal year 1921-22, 235 vessels, register tonnage 5,473 entered and cleared the port.

Shelburne Harbour, N.S.—south coast, is on the eastern and longer arm of the inlet, separated from Birchtown bay to the west by Hart point.

Sand point on the east side of the inlet and Surf point 7 cables SW. of it are the entrance points to Shelburne harbour and Birchtown bay; off Surf point is a remarkable boulder.

The harbour is safe, commodious, and easy of access, there is a depth of 2 fathoms near the wharves.

Navigation is generally open all the year.

Adamant Shoal.—with least depths of 8 feet on Adamant rock and 4 feet on Man of War rock, its shoalest part, is $1\frac{3}{10}$ miles long in a NE. direction, the SW. extreme being $\frac{3}{4}$ of a mile NNW. from Sand point lighthouse.

Anchorage.—A vessel may anchor anywhere in the harbour north of Adamant shoal in 5 to 7 fathoms, mud, a depth of 5 fathoms can be carried to the anchorage and to the Government wharf at Shelburne.

Lights.—for description of lights and other aids to navigation in Shelburne Harbour and approaches, see 1921 Admiralty "Nova Scotia (south east coast) and bay of Fundy Pilot," pages 204 to 206 inclusive, covering chart No. 3482, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions.—See 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," page 207, covering chart No. 3482.

Wharves.—beginning at SE. end of town are: one belonging to N. W. White, length 100 feet, width 80 feet at the outer end where there is $15\frac{1}{2}$ feet of water at low tide; the steamer wharf owned by G. A. Cox, which consists of a double wharf, one wing being 120 feet long by 40 feet wide, with a freight shed upon it; between this and the other wing is a space of 40 feet, the shortest wing is 100 feet long by 40 feet wide, the water at the outer end of each is 12 feet deep. The shore end of this wharf has a space of 160 feet in width, and upon this is a sail loft and salt fish warehouse; Hipson's wharves, one 140 feet long from shore by 40 feet wide, depth of water 12 feet, the other 110 feet long by 30 feet wide, depth of water 12 feet, with a water space of 90 feet between the two wharves, depth of water at the outer end 13 feet; Jos. McGill's wharf, 120 feet long on one side and a diagonal front of 80 feet at the outer end with 12 feet of water. On this wharf is a crane which lifts five tons. The Government wharf is 666 feet long, 40 feet wide, with a T 100 x 70 feet. depth of water at T 25 feet at low water. Rails are laid to the wharf and large quantities of pulp and lumber shipped from it. At the inside end of the wharf is a cold storage plant from which large quantities of fish are shipped and where vessels can obtain bait and ice.

Shipyards.—Are the Shelburne Shipbuilders, which turn out wooden vessels, there is coal yard in connection with this plant.

Matheson Jordan Shipyard always carries a stock of Oregon pine masts.

The Etherington Gas Engine Co. make all kinds of engines and have a repair shop.

The Joseph McGill Transportation Co., Ltd., specialize in fishermen's models.

At the head of the harbour is the W. C. McKay & Sons yard, which does a large amount of vessel building.

In addition there are 5 boat shops which specialize in ships' life boats, and also build large numbers of dories and pleasure boats.

Port Charges.—Are harbour master's and sick mariners' dues.

Supplies.—Coal, wood, water, gasoline, crude oil, and all kinds of ships' supplies are obtainable.

Communication.—Town is connected by rail and telegraph with the Dominion systems. There is a weekly steamer to Halifax.

The Town—contains several churches, hotel, schools, wood and sawmills, and shipyards. The principal industry is shipping.

Population in 1921 was 1,360.

Trade.—For the fiscal year 1921-22, value of exports \$133,555; of imports, \$12,747.

Shipping.—During the fiscal year 1921-22, 151 vessels, register tonnage 14,662, entered the port; 154 vessels, register tonnage 14,916, cleared.

Lloyd's Agent.—Frank C. Blanchard.

Spencer Island Harbour, N.S.—Bay of Fundy, Spencer island a small wooded island 180 feet high lies about one mile NE. from cape Spencer, there is a depth of 6 feet between the island and the shore.

Spencer island harbour and settlement is about $\frac{1}{2}$ mile northward of the island.

Light.—On the inner end of the wharf at the settlement, a white, square, wood tower, shows from a height of 34 feet above high water, a white fixed light.

Anchorage.—In 5 fathoms may be had 9 cables north of Spencer island and $\frac{1}{2}$ mile eastward of the light.

Fog Signal.—A fog signal is sounded from the outer end of the wharf.

Tidal Streams. Both tidal streams close SE. of Spencer island have a rate of 6 knots.

Port Charges.—As at other Canadian ports.

Supplies.—Are obtainable at the settlement which contains 2 stores, and fresh water in quantity can be obtained from a tank alongside the wharf.

St. Mary Harbour, N.S.—SE. coast, is at the mouth of the St. Mary river, the entrance points being cape St. Mary on the east and the Barachois point on the west, about $1\frac{1}{2}$ miles apart. From between the entrance points, the harbour trends in a general northerly direction for about $8\frac{1}{2}$ miles to the village of Sherbrooke, at its head. There is about 18 feet of water over the bar at the

entrance at high tide and 13 feet may be carried to the mill below Sherbrooke. With strong southerly winds the bar is dangerous, being a mass of breakers.

Sonora Village.—At McDiarmid cove about $1\frac{1}{2}$ miles from the entrance on the east shore, has a wharf, and post and telegraph offices, and fishing, lumbering and pulp wood business are carried on.

Sherbrooke Village—is on the east bank of St. Mary river at the head of navigation; here the Scotia Lumber Co. have a mill and wharves, and ship annually about 9,000,000 feet of lumber. There are also several lumber wharves between Sherbrooke and the harbour entrance—has a church, chapel, court house, jail, and post and telegraph offices. The nearest railway station is at Antigonish. The Sherbrooke and Halifax S.S. line steamer *Dufferin*, calls once a week. Besides its lumbering trade Sherbrooke employs a few schooners in the Labrador fisheries.

Light.—On SE. extremity of Horse shoal, $1\frac{1}{2}$ miles north of Barachois point, on crib pier, a white, square, wood tower shows from a height of 23 feet above high water, a red fixed light.

Buoy.—A black spar buoy marks the bank off Black head, $1\frac{1}{4}$ miles northward of Barachois point.

Directions.—See 1921 Admiralty “Nova Scotia (SE. coast) and Bay of Fundy Pilot”, page 71, covering chart No. 2519.

Pilots can be obtained from McDiarmid cove.

Port Charges.—Harbour master's and usual port charges.

Supplies.—Ship's supplies of all kinds can be obtained at Sherbrooke and Sonora.

Tangier Harbour, N.S.—south coast, is close westward of Pope harbour, and separated from it by the peninsula jutting out from the mainland, and Ironbound island, the west side of the harbour is formed by Tangier island and the two Baltee islands.

There is a shallow passage leading to Shoal bay on the west between the inner Baltee island and the mainland.

Depths.—The depth in the entrance between Ironbound and Tangier islands is 6 fathoms, but owing to crooked channel, lack of buoys, lights, and good leading marks the passage should not be attempted by strangers without a pilot.

Anchorage.—There is anchorage on the NE. side of the harbour $\frac{3}{4}$ of a mile northward of Porcupine hill, at the south end of peninsula on east side of harbour, in 12 to 15 feet, and in Mason cove $\frac{3}{4}$ of a mile further north are the same depths with better shelter.

Directions.—See 1921 Admiralty “Nova Scotia (southeast coast) and Bay of Fundy Pilot”, pages 102 and 103, covering chart No. 2855.

Water can be obtained from the river flowing into the head of the harbour.

Communication.—There is a post office and telegraph office at Tangier harbour, and it has weekly steamboat connection with Halifax.

Tatamagouche Bay, N.S.—north coast—on south shore of Northumberland strait, separates Cumberland and Colchester counties. Its entrance points are

Mullegash point on the north and Peninsula point on the south, $2\frac{1}{4}$ miles apart, and from between them the bay runs in SW. for 7 miles.

From 5 fathoms at entrance the depth decreases to 3 fathoms at $1\frac{1}{2}$ miles up the bay and to 2 fathoms at 4 miles, the remainder being shallow.

A rock with 7 feet least water, lies $3\frac{1}{2}$ cables off the northern shore and 2 miles inside Mullegash point, and is the only detached shoal in the bay. In the outer part of the bay the shore may be approached to a low water depth of 3 fathoms, and further in, to $2\frac{1}{2}$ fathoms.

Brule shoals, the SW. end of which lies about 1 mile NE. of Peninsula point, should be kept well to the southward in entering the harbour.

Anchorage is good all over Tatamagouche bay, regard being had to draught of vessels, but that towards Mullegash shore is the best sheltered from NE. winds.

Tides.—Springs rise 8 feet, neaps 5 feet.

Tatamagouche River.—In the SW. corner of the bay 5 miles from its entrance, is approached by a very narrow channel through the flats.

Light.—On Amet island, 4 miles NE. of Mullegash point, a white, square, wood tower shows 44 feet above high water, a white occulting light.

Port Charges.—There is a harbour master, and charges are harbour master's and sick mariners' dues.

Communication.—Postal and telegraph, and connected by Oxford branch of N.S. division with Canadian National Railway system. There are settlements with churches on north shore of harbour, and at Tatamagouche river.

Shipping.—During the fiscal year 1921-22, 9 vessels, register tonnage 516, entered and cleared the port.

Torbay, N.S.—S.E. coast, lies south of Chedabucto bay, its entrance points are Flying point on the east and Berry head on the west, $5\frac{1}{3}$ miles apart; from between these points the harbour is 4 miles deep north and south, and close inside them, 9 miles long east and west. At its NE. corner is Molasses harbour which affords secure anchorage for small vessels in 2 to 3 fathoms.

A narrow channel for fishing boats has been cut through the narrow isthmus separating Molasses harbour from Marshall cove to the eastward, where is the village of Whitehaven or Whitehead. Other harbours on the north shore of the bay affording anchorage in 2 or 3 fathoms, are Cole harbour about 3 miles NW. of Molasses harbour, Charlo harbour, about 2 miles westward of Cole harbour and Larry River harbour at the west end of the bay.

The principal entrance into Torbay is through a clear channel $\frac{3}{4}$ of a mile wide with depths of 8 to 12 fathoms between Berry head and Torbay ledges south of Sugar islands, which lie within the harbour entrance to the eastward.

Settlements.—At Port Felix, head of Molasses harbour, there is a settlement, with wharf 225 feet long, with depth of $9\frac{1}{2}$ feet at outer end—also post and telegraph offices. There are also post and telegraph offices at Cole harbour and Larry river, and the channel at the mouth of Larry river is buoyed.

The Halifax and Canso SS. Co. calls once a week at Cole harbour; and the Halifax and Sheet Harbour SS. Co's. steamer *Margaret* calls once a week at Larry river and Port Felix.

Lights—Buoys.—For description of lights and buoys in Torbay harbour and further hydrographic information, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot", pages 54 and 57, covering chart No. 2517, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast".

Directions.—See 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot" page 57, covering chart No. 2517.

Life-Boat.—At Deming point, the easternmost point of the peninsula forming the east shore of Torbay harbour, is a life-boat station.

Tracadie Harbour, N.S.—NE. coast—south shore of George bay. The entrance is between Delory island and the mainland to the eastward, through a narrow dredged channel with a least depth of 6 feet at low water, springs; over the bar at entrance to channel the least depth varies from 3 feet after storms to 5 feet.

Inside Delory island the harbour is extensive with 14 feet of water in the centre, and with many coves, islets, and streams. Tracadie river is at the head of the eastern arm $2\frac{1}{2}$ miles in from the sea. There is a breakwater and protection work on each side of harbour entrance. The harbour is used by fishing craft chiefly.

Tides.—Springs rise 4 feet, neaps $2\frac{1}{4}$ feet, but the rise may be increased by northerly winds.

Tracadie Village.—On south shore of harbour has a conspicuous Roman Catholic church, the inhabitants are Acadians subsisting by agriculture, and herring and mackerel fisheries. Population about 500. Has post and telegraph offices—and a station on main line of Canadian National Railway System.

Tusket River, Tusket Wedge or Wedgeport Harbour, N.S.—west coast—lies at the mouth of the Tusket river between Tusket Wedge and a group of islands to the eastward.

Big Fish and Tucker islands lie near the middle of the river mouth, Tucker island being $4\frac{1}{2}$ cables to northward of the former— $\frac{1}{3}$ of a mile northward of Tucker island is good anchorage in 6 fathoms, and at a little less than 2 miles northward of Tucker island is another anchorage in the same depth. Off the mouth of the river are numerous islands and outlying dangers.

Pioneer rock and Big Fish rocks lie about $3\frac{1}{2}$ cables westward and north westward respectively from Big Fish island lighthouse. Buoys indicate the river channel.

Light.—On SW. point of Big Fish island lantern on roof of wooden dwelling shows 50 feet above high water, a white group occulting light.

Buoys.—The west side of Pioneer rock is marked by a red conical buoy.

A red conical buoy marks the shoal extending $3\frac{1}{2}$ cables northward from the north point of Tucker island.

Directions.—See 1921 Admiralty "Nova Scotia (south east coast) and Bay of Fundy Pilot," pages 228 and 229, covering chart No. 2537.

Tides.—Springs rise 13 feet, neaps 10 feet.

Wharf.—There is a government wharf at Wedgeport in Goose bay on west side of Tusket Wedge peninsula.

Port Charges.—Are harbour master's and sick mariners' dues.

Supplies.—Ordinary ship's supplies are obtainable at Wedgeport.

Town of Wedgeport.—Is built on west side of Tusket Wedge peninsula, and carries on a considerable trade in lumber and agricultural products—has post and telegraph offices—population in 1921 was 1,424—nearest railway station is Arcadia, on Chebogue river, $7\frac{1}{2}$ miles distant.

Wallace Harbour, N.S.—north coast, at the mouth of the Wallace river, has 16 feet over the bar at mean low water springs, and is sheltered from all winds. The entrance between Palmer and Caulfield points, is 2 cables wide and carries $3\frac{1}{2}$ to 6 fathoms water; the approach over the bar and through the bay is by a crooked and difficult channel, $1\frac{1}{2}$ cables wide. At 6 cables within the entrance a middle ground begins and the channel is only half a cable wide.

Wallace on the south side of the harbour is $1\frac{1}{2}$ miles within the entrance—opposite Wallace the harbour is $\frac{1}{2}$ mile wide and the channel between the flats 60 yards wide with 5 fathoms water. At 2 miles higher up, the river divides into 2 branches. The south and principal branch has a bridge at its entrance 2 miles above Wallace.

Ship Channel.—Leading to Wallace Harbour, 3 cables wide at entrance, comes round Horton Bank and Horton spit, and then passing close north of Horton point which is steep to, runs westward to the entrance between Palmer and Caulfield points. The channel is marked at its entrance and throughout by buoys.

Anchorage.—There is good anchorage in 3 to 6 fathoms, mud, anywhere within 1 to 5 cables inside the harbour entrance points.

Lights—Buoys.—For description of lights and buoys in harbour and approaches, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 219, covering chart No. 2034 and plan No. 2003, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 220, covering chart No. 2034 and plan No. 2003.

Tides.—Rise springs 8 feet, neaps 5 feet.

Port Charges.—Harbour master's and usual port charges.

Supplies.—Ships' supplies can be obtained and water from wells and springs at high tide.

Communication.—Is a station on the Oxford branch of the Canadian National Railways, and has a post office.

The Village of Wallace.—On the south side of the harbour—is a straggling village prettily situated, with a church, and a number of wharves on both shores of the river; a bridge spans the river at Oyster island, $2\frac{3}{10}$ miles inside the mouth.

There are large freestone quarries in the vicinity, and the industries are farming, fishing, and the quarrying and export of freestone; population about 1,000.

Shipping.—During the fiscal year 1921-22, 4 vessels, register tonnage 150, entered the port; 3 vessels, register tonnage 71, cleared.

Walton Harbour, N.S.—is on south shore of basin of Minas at the mouth of the Walton river. A shallow bank called Cambridge flats extends in a NE. and SW. direction 2 miles off the mouth of Walton river and joins Walton bar, a sand bank dry at low water—the harbour itself is dry at low water.

Light.—On E. side of mouth of Walton river, a white, square, wood tower shows 60 feet above high water, a white group occulting light.

Walton Village.—On north side of Walton river—has a conspicuous tower 205 feet high—has post and telegraph offices—nearest railway station is Scotch Village, on the Dominion Atlantic road.

Weymouth, N.S.—is on the Sisiboo river, which empties into St. Mary bay on its east side; being a bar harbour vessels enter a short time before high water. The depth of water in the river varies considerably and is very shoal at low tide. Tugs and the services of pilots are available. Deep draught vessels load from lighters in the bay. The river is buoyed.

Anchorage.—There is anchorage in $5\frac{1}{2}$ fathoms about $\frac{2}{3}$ of a mile northwest of the entrance to Sisiboo river.

Tides.—In the vicinity of Weymouth in St. Mary bay tides rise 24 feet springs, 21 feet neaps.

Light.—Sisiboo light on the south side of entrance to Sisiboo river is a white square wooden tower showing a white fixed light at a height of 36 feet.

Wharves.—There are 5 wharves in the harbour privately owned, and 1 pier at Lower Weymouth.

The depth of water at the wharves ranges from 3 to 10 feet at low water, and from 12 to 24 feet at high water.

All ships load aground, except at Campbell's wharf, where the stern is afloat.

Port Charges.—A harbour master; usual port charges.

Communication.—Weymouth is connected by telegraph and rail with the Canadian systems.

Trade.—For the fiscal year 1921-22, value of exports \$134,060; of imports \$27,981.

Shipping.—In the fiscal year 1921-22, 345 vessels, register tonnage 12,517, entered the port, 348 vessels, register tonnage 12,630, cleared.

Westport Harbour, N.S.—is on the east side of Brier island and is entered through Grand passage. In the bay between the village and Peter island off South point, Brier island, there is anchorage in 5 to 7 fathoms mud. The harbour is open all year.

Buoys.—A bell buoy is moored in 14 fathoms 1 mile south of Peter island. The NW. side of Cow ledge shoal at the north entrance of Grand passage is marked by a black can buy.

A reef dry at low water 1 cable north from Peter island is marked by a black spindle beacon.

Lights.—On North point, Brier island, a white square wood tower shows from a height of 62 feet above high water a red fixed light. Fog bell in connection with light.

On Peter island, a white octagonal wood tower shows from a height of 62 feet above high water a white fixed light.

Hand fog horn in connection with this light.

Tides.—At Westport, rise 21 feet springs, 17 feet neaps, through Grand passage the tidal currents, at full strength run from 5 to 6 knots.

Wharves.—There are a number of wharves in the harbour including E. C. Bowers wharf and the Payson wharf used by the Insular S.S. Co. Several smaller wharves have fish houses. The Government pier has good landing with 15 feet at low water.

None of the wharves extend below low water mark.

Port Charges.—A harbour master and usual port charges.

Pilots.—For St. John, N.B., can be obtained at Westport.

Storm Signals.—Formerly shown at Westport, are now shown from Brier island light, west part of island, and are not visible from the harbour.

Supplies and water.—Supplies generally, and a certain amount of water from wells can be obtained.

Communication.—Westport contains a telegraph and post office, and several stores. The chief industry is fishing.

Shipping.—During the fiscal year 1921-22, 308 vessels, register tonnage 30,256 entered the port; 317 vessels, register tonnage 30,382 cleared.

Lloyd's Agent.—H. P. Bowers.

Windsor Harbour, N.S.—is at the confluence of the Avon and Ste. Croix rivers, about $8\frac{1}{2}$ miles SE. of Horton bluff by the Avon river which flows into the basin of Minas—between Horton bluff on the west side and Indian point on the east side, about $1\frac{1}{4}$ miles apart.

The estuary of the Avon river is almost blocked by extensive shallow flats, the three principal ones being Cross bar, Middle ground, and Western bar.

A depth of about $1\frac{1}{2}$ fathoms at low water can be carried across the bar with the assistance of a pilot.

Anchorage.—There is good anchorage for vessels of 15 feet draught—off the mouth of Avon river.

Lights—Buoys.—For a description of lights, buoys, and further hydrographic information from Avon river estuary to Windsor, see 1921 Admiralty "Nova Scotia (SE. coast) and Bay of Fundy Pilot", pages 263 and 264, covering chart No. 353, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions.—For reaching anchorage at mouth of Avon river, see 1921 Admiralty “Nova Scotia (SE. coast) and Bay of Fundy Pilot”, page 264, covering chart No. 353.

Wharves.—A large wharf on south bank of Ste. Croix river, belonging to the Colonial Fertilizer Co.’s plant, can accommodate ships up to 3,000 ton burden, Gridiron bed, depth of water alongside, at spring tides 27 feet, at neap tides 19 feet.

Two miles up Ste. Croix river on south bank are the Wentworth Gypsum Co.’s wharves about 1,000 feet in length with 4 loading berths, Gridiron beds, depth of water 26 feet at spring tides, 18 feet at neap tides, ships up to 4,000 ton burden load here.

Two miles below Windsor at Avondale is the Newport Mining and Manufacturing Co.’s wharf, 600 feet long, which can accommodate ships up to 4,000 ton burden; depth of water alongside, at spring tides 31 feet, at neap tides 23 feet.

Other principal wharves are the Government wharf and Mosher’s wharf, with railway sidings and sheds, and depth alongside of 16 feet at high water. There are about 12 wharves in all.

Port Charges.—Are harbour master’s and sick mariners’ dues as per Government schedule, and wharfage except at the Dominion Government wharf.

Pilotage.—Is non compulsory, but pilots can be obtained whenever required.

Tides.—Rise at Horton bluff, springs 48 feet, neaps 40 feet.

Supplies.—Bunker coal and ships’ supplies of all kinds are obtainable.

Communication.—Windsor has rail connection with Annapolis, Truro, and Halifax, and from Halifax with the Canadian and American systems.

Repairs.—There are no docks for repairs at Windsor, but repairs can be effected at Hantsport, 7 miles from Windsor, where there are good marine blocks.

The City of Windsor.—Has all the conveniences of a modern town and is the seat of the principal college in Nova Scotia. Population in 1921, 3,591.

In 1920 Windsor had 28 industrial establishments, employing 357 hands, total value of products \$1,448,689.

Trade.—Value of exports for fiscal year 1921-22, \$465,373, of imports \$213,056.

Gypsum in quantity, gold, manganese, and antimony are found in the vicinity of Windsor. The chief shipments are cotton, gypsum, lumber and fish.

Shipping.—During the fiscal year 1921-22, 353 vessels, register tonnage 131,197 entered the port; 350 vessels, register tonnage 130,557 cleared.

Lloyd’s Agent.—Capt. Lockhart Porter.

Wolfville, N.S.—is on the south shore of the basin of Minas at the mouth of the Cornwallis river.

In the estuary of the Cornwallis is good anchorage in 5 to 6 fathoms, by keeping the whole of Partridge island open east of cape Blomidon.

Light.—In the marsh near inner end of Government wharf, a white square wood tower shows from a height of 20 feet above high water, a red fixed light.

Wharves.—There are 4 wharves and a Government pier. The pier is about 100 feet by 40 feet with a depth of 30 feet alongside at highest tide, the wharves have a depth of 20 feet alongside at highest tide. On the wharves are freight sheds and 2 railway sidings run to them.

Port Charges.—Harbour master's and usual port charges.

Supplies.—Ships' supplies obtainable.

Communication.—Is the terminus of a branch of the Dominion Atlantic Railway. Has post and telegraph offices, and a steamboat service to Kingsport and Parrsboro.

The Town.—Of Wolfville is a popular resort in a rich farming country. Population in 1921 was 1,743. Chief exports fruit and farm products.

Shipping.—During the fiscal year 1921-22, 240 vessels register tonnage 16,606 entered and cleared the port.

Yarmouth Harbour, N.S.—south coast is entered from Yarmouth sound. From Yarmouth sound anchorage 3 cables ESE. of East cape, where there is $3\frac{1}{4}$ fathoms of sand, there is a narrow and intricate buoyed and beaconed channel for a vessel of 15 feet draught, in a general north direction $1\frac{3}{4}$ mile to the limited anchorage in 5 fathoms close north of Battery point, Bunker island, and for one mile further to Yarmouth wharves. The harbour is open all the year round.

Directions.—For entering Yarmouth harbour, from sound anchorage see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot" page 239, covering chart No. 2537.

Lights, Etc.—For description of lights and other aids to navigation from Yarmouth sound Anchorage to Yarmouth, see 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot" pages 237 to 239 inclusive, covering chart No. 2537, also department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

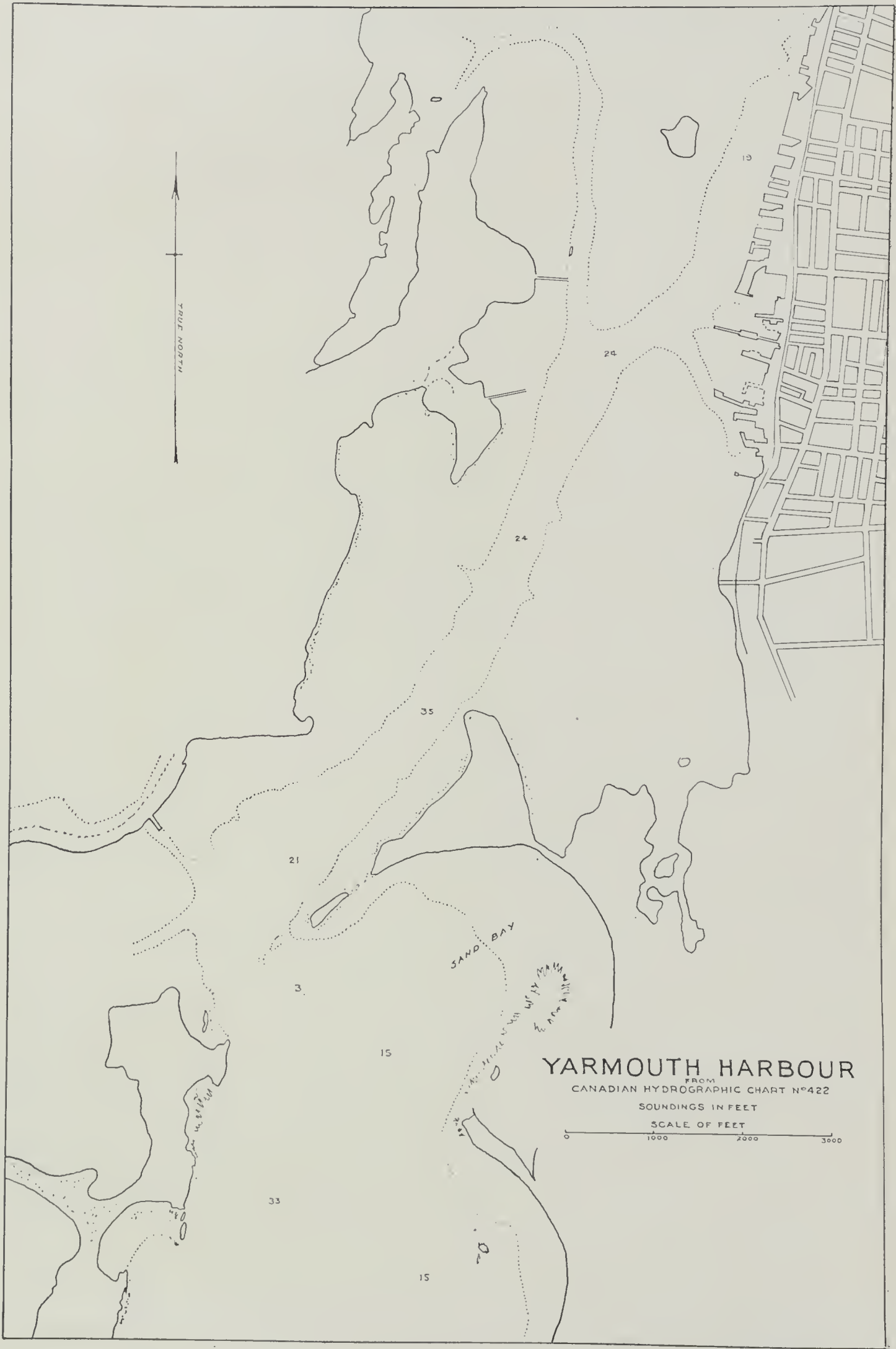
Tides.—In Yarmouth harbour rise 16 feet springs, 13 feet neaps.

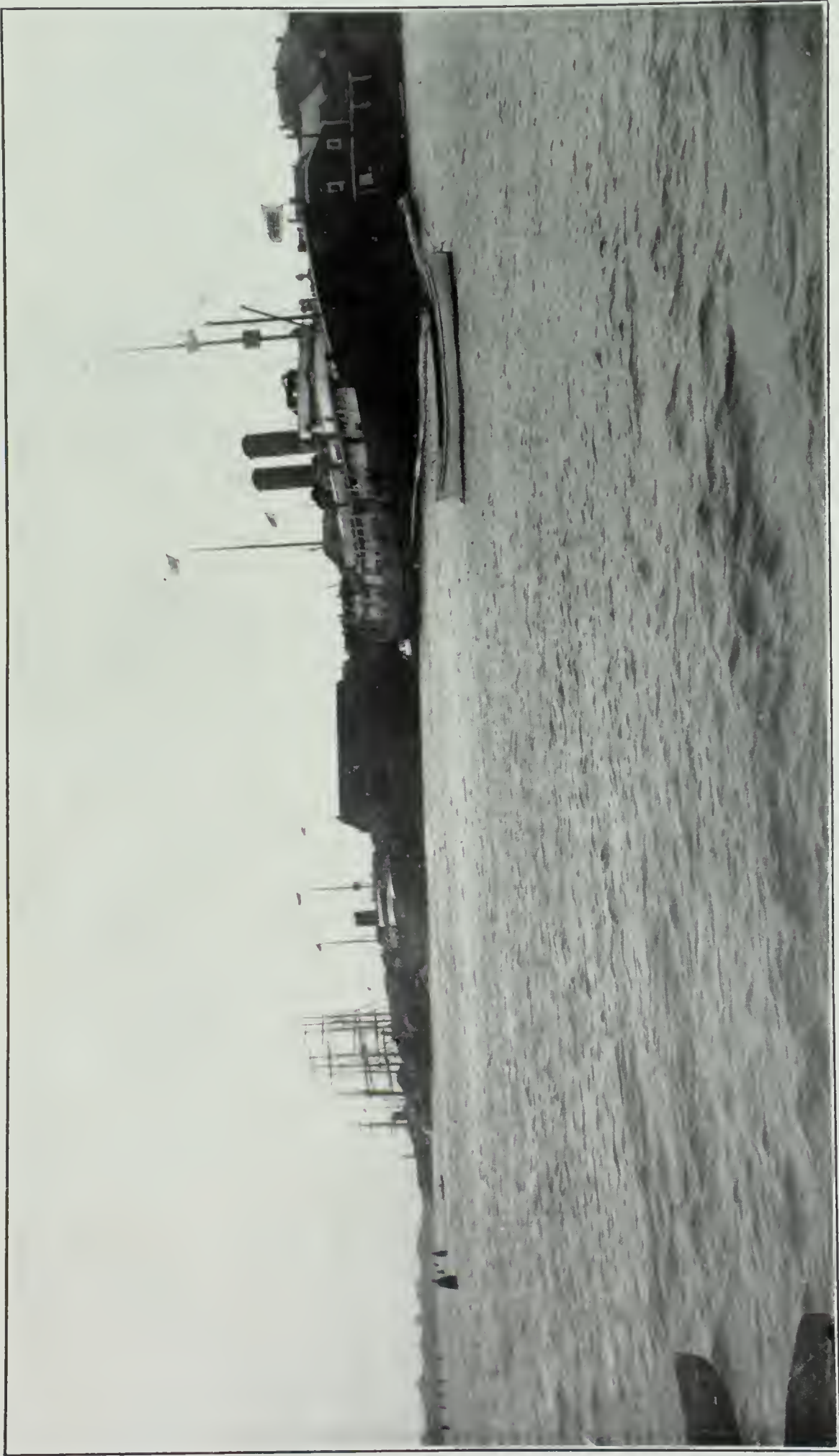
Port Charges.—As at other Canadian ports.

Wharves.—The principal wharf is known as the Evangeline wharf used by the Boston and Yarmouth lines, operating summer and winter, it has rail connection with the Canadian National Railways there is a depth of 19 feet at low water at this wharf. On the adjoining property south is Parker Eakins wharf, which also has railway connections and a depth of 19 feet at low water. Ships 60 feet long can lie afloat at these 2 wharves at all times of tide. These are the only two wharves with rail connections in Yarmouth harbour, but there are a number of other wharves, nearly all of them on the east side of the harbour.

Communication.—Lines of steamers run both summer and winter from Boston and bay of Fundy ports to Yarmouth. Has rail connection with the general systems, and telegraphic connection with all parts of Canada.

Supplies.—All kinds of ships' supplies including coal and fuel oil are obtainable in quantity.





Yarmouth, N.S. Harbour looking North.

Repairs.—There is a marine slip for hauling vessels out for repairs up to 1,200 tons register.

Water.—There are waterworks in the town.

Hospital.—A hospital for seamen is situated on Bunker island.

Storm Signals.—Are hoisted at Yarmouth.

Lifeboat.—A lifeboat is stationed at Bakers cove $\frac{1}{2}$ mile ENE. of Hen and Chickens islets in the Sound off East cape.

Industries—Population.—The chief industries are shipbuilding, cotton mills, iron foundries, machine shops. The chief shipments are fish, lumber and cotton.

The value of the manufactures in 1920 was \$5,392,646.

Population in 1921: 7,073.

Trade.—For the fiscal year 1921-22, value of exports \$3,412,190; of imports \$968,305.

Shipping.—During the fiscal year 1921-22, 980 vessels, register tonnage 214,691 entered the port; 1,087 vessels, register tonnage 229,696 cleared.

Lloyd's Agent.—R. S. Eakins, P.O. Box 204.

CAPE BRETON.

Arichat Harbour, C.B.—south coast—is on SW. side of Madame island. It is sheltered by East and West Jerseyman island stretching across the bay, and lying off the entrance, and is capable of securely containing a large number of vessels.

It is 2 miles in length east and west and about $\frac{1}{2}$ mile in average width. It has two entrances, the northern being the least difficult though only 1 cable wide, the southern entrance 3 cables wide lies between shoals. Fiddle shoal with 10 feet least water lies off Kavanagh point and to the westward of it, about $\frac{3}{4}$ of a mile NE. of East Jerseyman island, and is marked by a red spar buoy. The harbour is practically open all year round.

Depths.—The least water in the northern entrance is 9 to 10 fathoms, and 7 fathoms in the southern entrance. In the harbour itself there is 7 to 10 fathoms throughout the greater part of its area.

Lights—Buoys—Beacons.—For description of lights, buoys, and beacons in harbour and approaches and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot", Vol. 2, pages 118 to 121 inclusive, covering charts Nos. 2727 and 2756, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—For entering harbour by southern and northern entrances, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 121 and 122, covering charts Nos. 2727 and 2756.

Tides.—Springs rise 5 feet, neaps 4 feet. The tidal streams are regular and the rate seldom exceeds one knot.

Wharves.—The Government wharf at Arichat is 144 feet by 30 feet, with an L 90 feet by 50 feet on which is a warehouse. The channel face of the wharf has a length of 120 feet, and a depth of 19 feet at low water.

At Robin point on the south shore of the harbour, about half a mile inside of Kavanagh point, is a good wharf with depth of 20 feet at the end. There are 5 other private wharves on the north side of the harbour.

Port Charges—are harbour master's and sick mariners' dues.

Pilotage.—Pilotage charges, when pilots are employed, are according to rates of the Richmond county pilotage authority, as Arichat is in the Richmond pilotage district.

Supplies.—Ships' stores and provisions are obtainable.

Water—may be obtained at Irish point, the north entrance point of the harbour, from the outlet of a chain of small lakes behind the town, or from a spring on the north shore near Hubert's wharf.

Communication.—Postal and telegraph. Grande Anse on the St. Peter's branch of Canadian National system is the nearest railway station.

Halifax and Sheet Harbour SS. Co.'s steamer *Margaret* calls weekly. SS. *Arichat* between Mulgrave and Arichat calls daily.

Coastal Steamship Co.'s steamer, from Sydney to Mulgrave via Bras D'Or lakes, calls fortnightly.

The Village of Arichat is built in a straggling fashion for about 3 miles on the north side of the harbour. There is a Roman Catholic church and convent, and an Anglican church; and a courthouse with a pillared porch. The population is about 1,000.

Trade.—Arichat is the headquarters of the fisheries trade in the locality, and produces a considerable amount of gypsum from mines in the vicinity. Is the chief seaport on Atlantic coast of N.S. east of Halifax. For the fiscal year 1921-22, the value of imports was \$8,990; of exports \$322.

Shipping.—During the fiscal year 1921-22, 819 vessels, register tonnage 49,112 entered the port; 824 vessels, register tonnage 49,343, cleared.

Lloyd's Agent.—John E. Jean.

Baddeck Harbour, C.B.—is on the west side of Baddeck bay, which extends $2\frac{1}{2}$ miles just west of Red point on north shore of Great Bras D'Or, at its southwest entrance.

The harbour is between Kidston island off west shore of Baddeck bay and the mainland, and affords snug anchorage for vessels of moderate size in $4\frac{1}{2}$ fathoms. There are two entrances into the harbour, the northern one is preferable, the southern one being narrow.



Baddeck Harbour, C.B.

Ice.—The harbour is usually open by the 13th of April and closed by the 22nd of January.

Light.—On NE. point of Kidston island a white square wood tower shows from a height of 48 feet above high water a red fixed light.

Directions.—See 1916 Admiralty Pilot, Vol. 2, pages 73 and 74, covering chart No. 2727.

Wharves.—The Government wharf at Baddeck is 284 feet by 40 feet and has 18 feet at head at low lake level, with boat landing stages, offices, and warehouse attached. Another wharf is Macdonald's wharf, 200 feet by 30 feet, also with 18 feet at head, and freight shed and offices.

Supplies.—Ordinary supplies obtainable, and fresh water from a brook 1 mile west of harbour.

Communication.—Has a telegraph and post office and is a railway station on the Canadian National system.

Coastal Steamship Co. steamer from Sydney to Mulgrave calls fortnightly. Bras D'Or Steamboat Co., between Whyecomagh and Sydney, calls 3 times a week.

Farquhar Co.'s line from Halifax to Ingonish calls weekly.

Baddeck Steamship Co., Ltd., from Iona to Baddeck, twice daily.

Hendry's Ltd. ss. *Arcadia*, between St. Peters and The Sydneys, weekly.

The Town of Baddeck, the shire town of Victoria county, is on the mainland north of Kidston island, and is a popular summer resort particularly for Americans, has a population of about 1,500.

Trade.—For the fiscal year 1921-22, value of exports \$581,996; of imports \$15,570.

Shipping.—During the fiscal year 1921-22, 862 vessels, register tonnage 141,243, entered the port; 902 vessels, register tonnage 145,079, cleared.

Bourgeois Inlet Harbour, C.B.—south coast—is on north side of Lennox passage, and immediately west of St. Peter bay, the entrance from the southward is very narrow with 12 feet at low water. The inlet runs northerly for about $\frac{1}{2}$ a mile, and then extends east and west for about 1 mile, in a T shape with prevailing depths of 3 fathoms inside the entrance, and average width of $\frac{1}{6}$ of a mile.

Tides.—in St. Peter bay rise springs 6 feet, neaps 4 feet.

Light.—A light white fixed, 25 feet above high water, is shown on the mainland on east side of entrance at its narrowest part from a white, square, wood tower.

Settlement.—Stores, wharves, and a chapel are on eastern entrance side of inlet, and houses dotted all about it. The people are principally Acadians engaged in fishing and agriculture. There is a post office.

Cheticamp Harbour, C.B.—west coast—lies between Cheticamp island and the mainland. Its entrance is between the shingle spit at cape Gros the NE. end of Cheticamp island and Caveau point.

For small vessels within the entrance and outside the bar half a mile further in there is anchorage but it is insecure in northerly winds.

The channel over the bar has been dredged to a depth of 16 feet, for a width of 100 feet. Inside the bar is good anchorage, and it is much used by fishing vessels and other vessels in bad weather.

Lights.—There is a light on SW. point of Cheticamp island, and range lights on Caveau point and east side of Cheticamp harbour. See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 159 and 160, covering chart No. 2727, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Buoys.—Spar buoys mark the dredged channel over the bar, a black spar buoy marks the eastern limit of good water on Caveau point leading line, and a red spar buoy marks end of shoal NE. from NE. end of Cheticamp island.

Directions.—See Admiralty 1916 "St. Lawrence Pilot," Vol. 2, page 160, covering chart No. 2727.

Tides.—Springs rise $3\frac{1}{2}$ feet, neaps $2\frac{3}{4}$ feet.

Storm Signals are shown at Cheticamp.

Life Boat.—A motor life boat is stationed at Cheticamp.

Port Charges.—As at other Canadian ports.

Supplies.—Fresh provisions in limited quantity obtainable; water can be had from streams on east side of harbour.

Wharves.—The Great Northern Mining and Railway Co. have a wharf with railway siding, and 10 feet water at end. The Government wharf at which wharfage is paid according to tariff, has 11 feet alongside, there are some other wharves, for accommodation of fishing vessels, with sheds for curing fish.

Cheticamp Settlement.—There is a settlement in the east side of the harbour on the mainland and some houses on Cheticamp island. There is a post and telegraph office but the nearest railway station is at Inverness on the Canadian National System. North Bay S.S. Co. between Mulgrave and Pleasant Bay calls.

Shipping.—During the fiscal year 1921-22, 153 vessels, register tonnage 11,486, entered the port; 156 vessels, register tonnage 11,551, cleared.

Descousse Harbour, C.B.—south coast—is on north side of Madame island near its eastern end, and is formed by the former and Bernard island, the several parts of which, joined by beaches, extend eastward for nearly a mile fronting the coast of Madame island.

The entrance from the eastward is by a very narrow channel with 7 feet at low water, which passes close north of Gabion point the south entrance point of the harbour. Inside the harbour between Bernard island and Madame island is good anchorage in 3 fathoms. It is a secure harbour for fishing vessels, and operations are in progress to straighten and deepen to 14 feet at low water the entrance channel across the bar.

Tides.—Rise springs 6 feet, neaps 4 feet.

Port Charges.—A harbour master and usual port charges.

Descousse Settlement.—Is on Madame island opposite Bernard island and consists of a Roman Catholic chapel and some houses clustered about it. On Gabion point is a wharf, flag staff and stores, and at the settlement a pier 307 feet long with 12 feet at low water at its outer end.

Communication.—Postal and telegraph—nearest railway station Grande Anse—Halifax and Sheet Harbour S.S. Co's steamer *Margaret* calls weekly.

Gabarus Bay Harbour, C.B.—east side is 5 miles deep westward and nearly 5 miles wide at the entrance between White point to the northward and Cape Gabarus to the southward. The middle of the bay is clear of shoals. Off Simon point 1.4 miles west from White point, and $\frac{1}{4}$ mile south of it are some rocks nearly dry at low water, and a shoal with 18 feet extends 3 cables SW. from Simon point.

Harbour rock a dry ledge is near the head of the bay.

Anchorage.—Inside Harbour point in Gabarus cove, there is, in summer, tolerably safe anchorage in 4 fathoms, sand and clay, for vessels of moderate size. It is unsafe however in heavy E. and NE. autumn gales.

Light.—On Harbour point, south shore of Gabarus bay, and the east point of Gabarus cove, a white hexagonal wood tower, shows from a height of 47 feet above high water, a red fixed light.

Breakwater.—At Harbour point is a breakwater 190 feet in length.

Communication.—There is a telegraph office at Gabarus.

Glace Bay, C.B.—on east coast of island, affords no safe anchorage; at its head is an inlet Dyson pond with narrow outlet usually dry at low water.

At Glace Cove NW. side of bay shallow water extends $\frac{3}{4}$ of a mile off shore, and on opposite side at Macrea and Whelan points reefs run out for $\frac{1}{2}$ a mile.

Harbour Regulations.—At the port of Little Glace bay (Glace cove) vessels on arriving in the harbour shall have both anchors hanging at the hawse pipes, and the yards braced up.

Tides.—Rise $3\frac{3}{4}$ feet springs, $2\frac{1}{3}$ feet neaps.

Leading Lights.—*Front*—on south side of entrance to Glace cove a pole, small shed at base, shows from a height of 30 feet above high water a red fixed light.

Back.—1,280 feet, 207° true from front light on south side of Glace cove, a white square wood tower shows from a height of 50 feet above high water a red fixed light.

Bell Buoy.—An iron bell buoy, black and white vertical stripes, is moored in 7 fathoms, $1\frac{1}{8}$ miles from Glace Bay front light, in the alignment of the leading lights.

Storm Signals.—Are shown from the north side of Glace cove.

Wharves.—The few wharves in the harbour are in a very dilapidated condition, having been washed away. Only vessels using the port at present are small schooners from 10 to 60 tons register, carrying P.E.I. produce and pit props, and a few fishing boats.

Supplies.—No ship chandlers, but small hardware, grocery, and general stores.

Port Charges.—Harbour Master's and usual port charges.

Communication.—is a station on the Sydney and Louisburg railroad.

Population—Trade.—For the fiscal year 1921-22, the value of the imports was \$332,085, of the exports \$1,100. Population in 1921 was 17,007.

Shipping.—During the fiscal year 1921-22, 94 vessels, register tonnage 3,812 entered the port, 104 vessels register tonnage 4,076 cleared.

Great Bras D'Or, C.B.—east coast—is the western and principal of the two channels on either side of Boularderie island leading to Bras D'Or lake. Its entrance between Casey point on N.W. and Noir point on the SE.—is deep but contracted by shoals to a width of 220 yards, measuring from the depth of 3 fathoms on either side. The least depth in the channel fairway is 29 feet.

Eddy rock, with one foot least water, lies within the entrance on south side of channel about 9 cables SW. of Noir point.

Buoyage.—In proceeding southwestward through Great Bras D'Or, the channel is marked by red buoys on the starboard side and black buoys on the port side.

Tides.—At entrance of Great Bras D'Or, springs rise 3 feet, neaps 1 foot 9 inches. The usual rate of tidal streams at entrance is 4 to 5 knots, but in the spring after NE. gales may attain to 6 knots. The streams form strong eddies off Casey point.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2 page 37, covering chart No. 2727.

Settlements.—On west side of Boularderie island near the entrance to Great Bras D'Or at Livingstone cove, is a settlement and a wharf, 150 feet long with 11 feet water, at low water at its outer end.

On west side of Boularderie island about 7 miles within entrance of Great Bras D'Or, is another settlement called Boularderie centre, with wharf 164 feet long and a depth of 13 feet at its outer end at low water.

Supplies.—Fresh provisions are obtainable at settlements and water is easily procurable.

Ingonish North and South Bay, C.B.—east coast—Ingonish bay lies between Archibald point to the northward and cape Smoke to the southward $3\frac{3}{4}$ miles apart.

The bay is divided into North and South bays by the narrow, high, rocky peninsula of Middle head, a cable SE. of which is Fisherman rock with 12 feet of water over it. The mountains behind Ingonish attain a height of 1,392 feet, and cape Smoke rises abruptly 950 feet above the sea.

Breakwaters.—At Archibald point is a breakwater 484 feet long with an L end 77 feet long, with depth along face of 11 feet at low water springs.

At Burkes head on north side of North bay is a breakwater 390 feet long with L 120 feet on channel face, with 15 feet depth of water.

Depths.—There are depths of from 3 to 12 fathoms in North and South Ingonish bays.

Anchorage.—Vessels usually anchor on northern side of North bay of Ingonish westward of Archibald point.

South Bay.—At head of South bay is a lake separated from the sea by a beach, through which a channel 130 feet wide, with 20 feet depth at low water, has been cut. The lake has an area of 400 acres, is deep, and a safe and roomy harbour.

There is a wharf with $8\frac{1}{2}$ feet at outer end at low water on north side near entrance, and on the south side opposite one with 16 feet at its outer end at low water.

Tides.—Rise springs 4 feet, neaps $2\frac{3}{4}$ feet at Ingonish.

Lights.—On Ingonish island off Archibald point, a white, square, wood tower shows from a height of 237 feet above high water, a white fixed group flashing light.

On beach on south side of entrance to South bay harbour, a white, square, wood tower shows from a height of 45 feet above high water, a red fixed light.

On breakwater on N. side of entrance to South bay harbour, a white mast shows from a height of 26 feet above high water, a white fixed light.

Buoys.—Three red conical and 3 black spherical buoys mark the channel to South Ingonish bay harbour.

Storm Signals are shown at North Ingonish.

Settlements.—There is a settlement at Ingonish South bay near the lake with a post office, also one at Ingonish centre, but the principal settlement is at North Ingonish inside Archibald point, where there is a chapel, post office, and fish stages.

The North Shore S.S. Co. from Sydney to Bay St. Lawrence calls daily, and the Farquhar Co.'s line from Halifax weekly.

Inverness Harbour, C.B.—west coast is entered from Broad cove about 13 miles SW. of Margaree river entrance. The harbour is separated from the sea by a sand beach 400 feet wide, through which a protected channel, 50 feet wide at bottom with depth of 12 feet at low water, has been dredged into the harbour.

Communication.—Postal and telegraph and is a terminus of the Inverness Railway and Coal Co., Ltd., Point Tupper to Inverness.

North Bay S.S. Co. Ltd between Mulgrave and Pleasant bay calls.

Town of Inverness.—Is on the shore of Broad cove, and an incorporated mining town. Population in 1921 was 2,963.

Shipping.—During the fiscal year 1921-22, 3 vessels, register tonnage 30, entered and cleared the port.

Little Bras D'Or Harbour, C.B.—east coast, is a narrow and winding passage on the east side of Boularderie island, expanding 5 miles within its entrance into the wide and deep channel of St. Andrew.

The entrance, $\frac{1}{2}$ mile south of High Cape lighthouse has been dredged to a depth of 18 feet at low water for a width of about 80 feet, is only available for small craft under favourable circumstances, and is dangerous in a heavy sea.

Coal is shipped from the docks of the Bras D'Or Coal Co., Ltd., about 40,000 tons were shipped in the season of 1922 by steamers. The port is also used by a considerable fleet of shipping vessels.

Light.—On High cape, 1 mile south of point Aconi, a white, square, wood tower, dwelling attached, shows from a height of 91 feet above high water, a white occulting light.

Tides.—Springs rise 3 feet, neaps 2 feet.

Storm Signals.—There is a storm signal station on Alder point, the eastern entrance point of Little Bras D'Or.

Supplies.—Ships' supplies are obtainable.

Port Charges.—Usual port charges.

Communication.—Has a post office and is a station on the Sydney branch of the Canadian National Railways. There is a draw bridge at Little Bras D'Or.

Little Narrows, C.B.—Is the narrowest part of St. Patrick channel about 6 miles NE. of Whycocomagh, and commences $\frac{3}{4}$ of a mile SW. from Green point the NW. point of Oyster creek (locally Big pond), on south shore of St. Patrick channel, and then runs SW. for about the same distance. Depths at east and west entrances from 40 to 46 feet.

Eel Shoal with least depth of 3 feet is on east side of the channel off Green point.

Buoys.—A black spar buoy marks the NW. side of Eel shoal. A red spar buoy is moored on S. end of bank off west entrance point of south entrance to Little Narrows.

Light.—At eastern entrance, south side, a white, square, wood tower shows from a height of 40 feet above high water a white fixed light.

Directions.—See 1916 Admiralty "St. Lawrence Pilot" Vol 2, pages 76 and 77, covering chart No. 2687.

Supplies.—No ships' supplies are obtainable.

Communication.—Has a post office and is a station on the Canadian National system main line. Bras D'Or Steamboat Co. between Whycocomagh and Sydney calls about 3 times a week.

Hendry Ltd. SS. *Arcadia* between St. Peters and the Sydneys calls weekly.

Little Narrows Settlement.—On south side of Little Narrows—has 2 wharves and a ferry slip.

Louisburg Harbour, C.B.—south coast—the entrance to the harbour between Lighthouse point and Rocky and Battery islands is $3\frac{3}{4}$ cables wide, but the navigable channel 2 cables wide.

Within the entrance Southwest arm trends SW. $1\frac{2}{10}$ miles, with general width of about $\frac{1}{2}$ mile, and North East arm trends NE. within Lighthouse point for about a mile; the usual anchorage is in this arm. Battery shoal at entrance to North East arm has least depth of 16 feet on it.

Depths.—In North East arm anchorage and vicinity of wharves, depths are 30 to 36 feet.

In the harbour fairway least depths are from 36 to 42 feet between Battery and Russel point shoals.

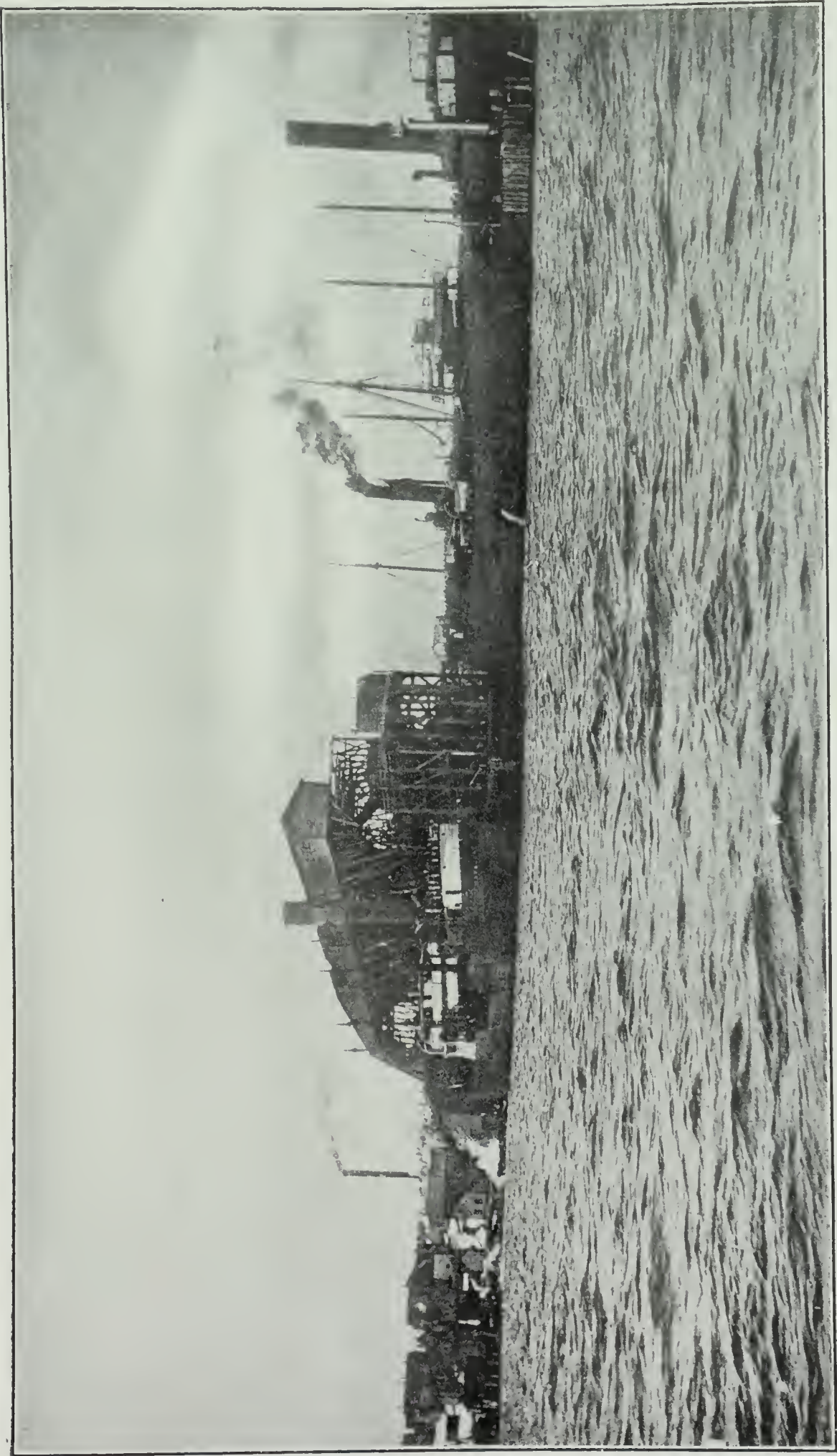
Lights—Buoys.—For description of lights, buoys and other aids to navigation in Louisburg harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 56 to 60 inclusive, covering chart No. 2727, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions.—See 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 60 and 61, covering chart No. 2727.

Tides.—Rise springs 5 feet, neaps 4 feet.

Ice.—North East Arm freezes on or about 15th of January, but the ice breaks up with southerly winds, and the port is open throughout the year.

Port Charges.—Harbour master's and sick mariners' dues, according to schedule.



Louisburg, C.B., Coal Pier.

Pilotage.—The rates are: sail and steamship, 80 to 120 tons, \$4 inward, \$3 outward; 120 to 200 tons, \$6 inward, \$4 outward; 200 to 300 tons, \$7 inward, \$5 outward; 300 to 400 tons, \$8 inward, \$6 outward; 400 to 500 tons, \$10 inward, \$8 outward; 500 to 700 tons, \$11 inward, \$9 outward; 700 to 1,000 tons, \$13 inward, \$11 outward; 1,000 to 1,500, \$15 inward, \$12 outward; 1,500 to 2,000, \$16 inward, \$14 outward; 2,000 to 2,500, \$18 inward, \$16 outward; 2,500 to 3,000 tons, \$22 inward, \$18 outward.

Over 3,000 tons one cent additional per ton inward and one cent additional per ton outward.

Winter pilotage after 30th November up to and including 30th April, is 20 per cent additional to the above rates on sailing ships and steamships.

Wharves.—The principal wharves are: Dominion Coal Co's. 2 wharves both 700 feet long, with depths alongside of 26 feet at low water springs, the freight wharf has a railway siding for its full length. Vessels unload by donkey engine; at the other wharf coal is loaded by Robins Conveyor System from a coal pocket holding 6,000 tons.

W. W. Lewis Co.'s wharf is 300 feet long, depth alongside 15 to 25 feet.

P. O'Toole & Sons' wharf 250 feet long is near the Sydney & Louisburg railway sidings.

Other wharves are: Z. W. Townsend & Sons, 200 feet long, C. L. Mitchell & Co.'s wharf and lobster factory 150 feet long, depth on each side 15 feet, J. W. Townsend's wharf, 200 feet long, depth of water west side about 15 feet.

There are a number of other small wharves owned by fishermen.

Repairs.—There are 2 marine repair plants with machinery for making ordinary repairs to ships.

Coal.—The Dominion Coal Co. supply the best grade of bunker coal, from their wharf by chutes—8 on the west and 7 on the east side of wharf.

Supplies.—All other ships' supplies are obtainable from W. W. Lewis & Co. and P. O'Toole & Sons, ship chandlers.

Water can be obtained from 2 tank boats—or a brook near Gerratt head just south of the town.

Tugs are available.

Hospital.—There is a marine hospital at Louisburg.

Storm Signals are exhibited.

Communication.—Louisburg is connected with Sydney by rail. There is a telegraph office.

Louisburg Town.—On north side of North East Arm, is of historic interest. Under French rule had a large export trade in cod, and was reputed the strongest fortress in North America, taking thirty years to build and costing one million pounds sterling.

It was taken by the New England colonists and an English squadron in 1745. Restored to France by the peace of Aix-la-Chapelle in 1748; and finally taken by an English naval and military force, under Admiral Boscawen and General Amherst, in 1758, and the fortifications dismantled, but traces of the old fort are still to be seen on the south shore of the harbour.

Is an extensive coal shipping port.

Population in 1921 was 1,152, chiefly fishermen and farmers.

Shipping.—During the fiscal year 1921-22, 452 vessels, register tonnage 138,270 entered the port; 459 vessels, register tonnage 140,735, cleared.

Lloyd's Agent.—A. A. Martell.

Mabou Harbour, C.B.—west coast—is at the mouth of the Mabou river. The dredged channel over the bar at the mouth of the river is 100 feet in minimum width, and 12 feet deep at low water springs.

On the south side of the channel is a breakwater pier 835 feet long, and a stone work extends about 1,600 feet out from its outer end. The bar is about one cable seaward from the outer end of the pier.

From the entrance to the railway bridge is $3\frac{1}{4}$ miles and 5 to 8 fathoms can be carried to the bridge, and boats can ascend 2 miles farther up.

Coal Mine Cove.—Two miles NE. of Green point the NE. entrance point of Mabou river is Coal Mine Cove, where there is a breakwater pier 320 feet long, and a wharf 160 feet long, with 18 feet water at the ends with double railway track to the mine, and from which vessels ship coal.

Wharves.—There are two wharves on the north side of the river at 4 and 6 cables respectively within the outer end of the breakwater pier, where vessels load gypsum.

Lights.—On outer end of breakwater on SW. side of dredged channel, a white square wood tower shows from a height of 30 feet above high water, a white fixed light.

On north shore at McFayden's wharf, 2,000 feet from preceding light, a similar tower shows from a height of 44 feet above high water, a red fixed light.

The lights in line lead through the dredged channel to the breakwater.

Buoys.—The south side of the dredged channel is marked at its outer end by a red conical iron buoy, the north side by a black iron can buoy.

Tides.—Springs rise 4 feet, neaps 3 feet. The tidal current at the river entrance frequently runs at the rate of 4 knots.

Communication.—There is a telegraph and post offices at Mabou.

Shipping.—During the fiscal year 1921-22, 25 vessels, register tonnage 1,925, entered and cleared.

MacKinnon Harbour, C.B.—On NW. shore of Bras D'Or lake—is entered between MacKinnon point on the NW. on the mainland and Campbell island on the SE., about a mile apart, the harbour lies between the mainland on the north and the group of islands of which Campbell island is the easternmost to the south.

The dredged entrance channel to the harbour, 150 feet wide, has depth of 20 feet at low water; within the entrance to the harbour is a pier, extending into 20 feet at low water from which gypsum is shipped.

Light.—On east side of Campbell island, a mast with shed at base, shows 30 feet above high water a white fixed light.

Buoys.—A red spar buoy marks SW. end of shoal ground 2 cables off MacKinnon point, a black spar buoy marks east end of shoal, running eastward from Campbell island.

Port Charges.—As at other Canadian ports.

Communication.—Postal and telegraph—station on Sydney branch, N.S. division of Canadian National Railways.

Margaree Harbour, C.B.—west coast, 10 miles southward of Cheticamp point at mouth of Margaree river is entered by a narrow and intricate channel through which tidal streams run at rate of 4 knots. At the entrance is a bar of shifting sand. There is a breakwater on SW. side of entrance and beach protection works on NE. side.

The depth over the bar is 9 feet, and the harbour can only be used by small vessels under favourable circumstances. Boats can ascend about 6 miles from entrance to tide head.

Leading Lights.—On west side of mouth of Margaree river a white, square, wood tower, dwelling attached, shows from a height of 75 feet above high water, a red fixed light.

A similar tower, 215 feet 165° 40' true from front light shows from a height of 105 feet above high water, a red fixed light.

Tides.—Springs rise 3½ feet, neaps 2¾ feet.

Communication.—Postal and telegraph—Inverness on the Inverness Railway and Coal Co., Ltd., Point Tupper to Inverness, is the nearest railway station.

North Bay SS. Co., Ltd., between Mulgrave and Pleasant bay calls.

Hendry Ltd. SS. *Strathlorne* from Halifax to Mulgrave calls weekly.

Coastal Steamship Co's steamer from Sydney to Mulgrave calls fortnightly.

Shipping.—During the fiscal year 1921-22, 149 vessels register tonnage 11,414 entered the port; 151 vessels register tonnage 11,437 cleared.

Neil Harbour, C.B.—East coast—lies about 2½ miles SW. of cape Egmont—is a small bay open to the S. and SE. but sheltered from the NE. by Neil head, the bay extends inland about half a mile, and a breakwater built off the south part of Neil head to a depth of 17 feet at low water, protects the anchorage in SE. gales. The harbour is an important fishing station.

Light.—On Neil head, a white, square, wood tower, red lantern, shows from a height of 73 feet above high water, a white fixed light. Hand fog horn in connection with light.

Whistle Buoy.—A conical whistle buoy is established one mile SE. of Neil head lighthouse.

Buoy.—A black spar buoy marks the shoal off South point on south side of harbour.

Tides.—Rise 4 feet springs, 3 feet neaps.

Port Charges.—Harbour master's and sick mariners' dues.

Storm Signals.—There is a storm signal station at Shoal point.

Communication.—Postal and telegraph, North Shore SS. Co. between Sydney and Bay St. Lawrence calls daily. Farquhar Co's line from Halifax calls weekly.

New Campbellton Harbour (Kelly Cove), C.B.—is 1 mile inside of Carey point the north entrance point to Great Bras D'Or.

It is about $\frac{3}{4}$ of a mile wide at the mouth and half a mile in depth, with 20 to 24 feet water, mud bottom, it affords good anchorage and good shelter except from SW. winds; the depth of water is said to have been reduced by careless discharge of ballast.

Anchorage.—There is good anchorage off the mouth of Kelly cove in 5 to 6 fathoms sand.

Lights.—On Noir point, opposite Carey point, a white, square, wood tower shows from a height of 41 feet above high water, a white fixed light.

A similar tower 1,689 feet, $209^{\circ} 15'$ true from front light, shows a similar light at a height of 63 feet.

Port Charges.—None.

Supplies.—Only food supplies obtainable and coal.

New Campbellton at the head of the cove, has a telegraph office. There is a small coal mine in the vicinity which ships coal from New Campbellton, but it is not worked to any extent.

Large dolomite and limestone areas abound in the neighbourhood.

Lobster fishing is carried on to some extent.

Shipping.—During the fiscal year 1921-22, 104 vessels, register tonnage 20,019 entered the port; 63 vessels, register tonnage 11,279 cleared.

Petitdegrat Harbour or Inlet, C.B.—south coast—separates Petitdegrat island from Madame island—is a narrow channel 2 miles long with water enough for moderate sized vessels, but the rocks are numerous, the channel narrow, and the aid of a native pilot is necessary. The principal entrance is from the south, the north one being obstructed by sand bars. Harbour practically open all year.

Depths range from 10 fathoms inside mouth of inlet to 2 fathoms at low water opposite Petitdegrat on the east shore.

Light.—On Mouse island east side of inlet, a white, square, wood tower, dwelling attached, shows from a height of 38 feet above high water, a red fixed light. Hand fog horn connected with light.

Light and Bell Buoy.—A black and white vertically striped bell buoy is moored in 10 fathoms near the middle of the harbour entrance, and shows an occulting white light.

Buoy.—The eastern side of the entrance is marked by a red conical buoy on west side of Big Arrow rock.

Port Charges.—A harbour master and usual port charges.

Petitdegrat Settlement.—On east side of inlet is a settlement of fishermen, and fisheries are extensively prosecuted from the inlet as from others in the vicinity. There is a wharf, Comeau's, and post office. The nearest railway station is at Grande Anse on the Canadian National System. SS. *Arichat* between Mulgrave and Arichat calls daily.

Port Hastings (Plaister Cove), C.B.—on east shore of gut of Canso, is 2.4 miles NW. of Port Hawkesbury, is the first safe anchorage after entering the gut from the northward. On its NW. side are conspicuous cliffs of white gypsum 120 feet high. The head of the port which forms a cove, is dry at low water.

Anchorage is in from 6 to 10 fathoms for large vessels and convenient and safe in all winds. In northerly winds the swell deflected by cape Porcupine, may make the riding uneasy but not dangerous.

Light.—A white fixed light is shown, at 44 feet above high water, from a white square wooden tower, 32 feet high, on Balache point.

Hand fog horn operated in connection with this light.

Wharves.—Are the Inverness and Richmond Railway Co.'s coal shipping wharf, 330 feet long with 20 to 28 feet water alongside, with railway running on it at the port, and an inner pier for schooners, and a government wharf 120 feet by 40 feet, with a freight shed.

Tides.—Ordinary springs rise $4\frac{1}{2}$ feet, neaps 3 feet, exceptional tides sometimes rise 6 to 7 feet.

Port Charges.—Are harbour master's and sick mariners' dues.

Dixon Rock with 12 feet water over it, bears 156° true, 140 yards, from Mackeem point, and 236° true, 240 yards, from the western point of Port Hastings.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 142, covering chart No. 3383.

Notice Boards warning vessels not to anchor near the line of the cables, are erected on Balache point and cape Porcupine.

Coal can be obtained at Port Hastings; 600 tons can be sent down daily, and 200 tons per hour loaded by shoots.

Water.—Good water can be supplied by waterboat at \$1 per ton. There is an excellent watering place on the western shore of the gut, in the bay between Keaton point and cape Porcupine.

The Town.—Contains a post office, a large and noticeable telegraph office, whence electric cables cross the gut to the mainland, and a station of the Inverness and Richmond railway. There is a conspicuous church just north-westward of the port.

Shipping.—In the fiscal year 1921-22, 260 vessels, register tonnage 28,530, entered the port; 260 vessels, register tonnage 29,215, cleared.

Port Hawkesbury Harbour, C. B.—is on the east side of the gut of Canso opposite Port Mulgrave—it is a large cove with a railway bridge at its head about 1 mile from the entrance.

Its south entrance point is point Tupper, Premier shoal with 13 feet least water, mud, is a middle ground in the entrance, but may be passed on either side, the better channel is to the north.

Anchorage.—The roadstead off the mouth of the harbour and outside Premier shoal has a depth of 7 to 9 fathoms, sand, gravel, and mud, and is much frequented. In the harbour itself is safe anchorage in $3\frac{1}{2}$ fathoms.

Prohibited Anchorage.—Anchorage is prohibited between point Tupper and Murray cove opposite in the track of the railway ferry.

Tides.—Rise 4 feet springs, 2 feet neaps.

Ice.—The harbour usually freezes over about the 3rd of February and is clear of ice about 23rd of April, but is completely closed only at intervals between these dates.

Port Charges.—Harbour master's dues paid twice a year and sick mariners' dues three times a year if not paid elsewhere.

Pilotage is under the Inverness Southern Pilotage Authority; payment of dues is non-compulsory.

Light.—On Tupper point a white, square, wood tower, dwelling attached, shows from a height of 54 feet above high water, a red fixed light.

Storm Signals are shown at point Tupper.

Railway Ferry.—From Point Tupper, the railway ferry crosses to the terminus of the mainland branch at Murray cove. The railway ferry ice-breaking steamer is built to carry 9 railway sleeping cars—on three sets of rails on deck. The railway ferry is open all year.

Hospital.—A marine hospital is maintained at Point Tupper.

Quarantine.—Port Hawkesbury is a minor quarantine station.

Wharves.—The National Railway has its terminus at Point Tupper where a large group of wharves have been built, extending about 400 feet from shore with a frontage of about 500 feet; with a depth of 22 feet of water at head. The railway sheds are on this wharf with station about a quarter mile in from the wharf. The other wharves are H. W. Embrees' wharf (now building) which when completed will be 130 feet long with a depth of water at head of 18 feet, there is a fine boat building establishment on this wharf with capacity for building boats 100 feet long under cover.

The Halifax Cold Storage wharf, 115 feet long, 43 feet wide, water 22 feet at head. This wharf extends out from a wharf parallel to the shore, 210 feet front, and 114 feet deep to the shore, with 14 feet of water at head. This wharf has a shed 200 by 38 feet where fish is handled; there is also on it a modern cold storage plant from which large quantities of fish are shipped.

The National Fish Company's two wharves, 150 feet long each, the southern one is 60 feet wide with 18 feet of water at head. The Northern one is 50 feet wide with 20 feet of water at head. These wharves are under cover and there is a dock between them, 50 feet wide. There is a modern cold storage plant at these wharves where large quantities of fish are handled and where ice is obtainable.

P. Paint & Sons' wharf, 100 feet long 30 feet wide with 15 feet water at head. The Government wharf, 400 feet long, width at head 120 feet, depth of water at head 22 feet. There is a shed on this wharf 80 by 30 feet.

Supplies—Coal.—Ships' supplies are obtainable and coal can be delivered to vessels at Port Hawkesbury wharves but there are no special facilities for service.

Communication.—Postal, telegraph, and railway.

North Bay Steamship Co., Ltd., between Mulgrave, N.S., and Pleasant Bay, N.S., call.

Hendry Ltd., steamer *Strathlome* from Halifax to Mulgrave calls weekly. There is a settlement with two chapels on NE. side of harbour.

Trade.—For the fiscal year 1921-22, value of exports \$7,396, of imports, \$7,177.

Shipping.—During the fiscal year 1921-22, 485 vessels, register tonnage 61,152 entered the port; 488 vessels register tonnage, 59,529 cleared.

Lloyd's Agent.—G. O. Forsythe (Acting) Point Tupper, C.B.

Port Hood Harbour, C.B.—west coast—runs between Port Hood island and the mainland of Cape Breton island. The north entrance is intricate with 12 feet at low water and is only used by small craft. Depths in the harbour vary from 2 fathoms at the north end to 4 and 5 fathoms in other parts, and 7 fathoms at low water at its south entrance.

In the bay inside South point, the east point of Port Hood island, and the spit extending southward off it, is sheltered anchorage in 3 to 4½ fathoms mud.

A sandy flat, called Spit head runs 6 cables NE. from Portsmouth point the south end of Port Hood island, and affords partial shelter inside from southerly winds, but S. or SW. gales send in a heavy swell.

Breakwater.—A breakwater built out from the mainland at north end of harbour towards Hood island, protects the harbour from northerly winds. The breakwater is 4,650 feet in length.

Lights—Buoys.—For description of lights and buoys, in harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 146 to 148, covering chart No. 2727, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast".

Directions.—See 1916 Admiralty "St. Lawrence Pilot" Vol. 2, page 149, covering chart No. 2727.

Tides.—Springs rise 4½ feet, neaps 3½ feet.

Ice.—The harbour usually freezes over by 20th January and is clear of ice by April 20.

Wharves.—Government wharf 634 feet by 25 feet with L 129 feet long, width 50 to 75 feet, depth alongside 11 feet at ordinary low water.

The Port Hood and Richmond coal pier 2,500 feet long and 60 feet wide, equipped with pockets and chutes, with depth at end of 20 feet. There is a railway track to the pier which is used for shipping coal only. There are 2 wharves on Port Hood island, one 160 feet long, width 25 to 40 feet, depth at low tide alongside 15 feet; this wharf has shed, ice-house, and fish curing store; the other 230 feet long, 25 to 32 feet wide, depth alongside 13 feet, with fish curing shed, and cold storage building. There is also a lobster canning factory.

Supplies.—Fresh provisions can be obtained, but there is no good watering place.

Storm Signals are shown at Port Hood.

Communication.—Postal and telegraph—station on Inverness Railway and Coal Co., Ltd., line.

North Bay Steamship Co., Ltd., between Mulgrave and Pleasant bay, calls. Hendry Ltd., SS. *Strathlorne* from Halifax to Mulgrave, calls weekly.

Coastwise Steamship Co's steamer from Sydney to Mulgrave, calls fortnightly.

Village of Port Hood.—Is on mainland opposite north part of Port Hood island, the Roman Catholic church and the courthouse of stone are the most conspicuous buildings, is in the vicinity of a coal mining district. Population about 1,100.

Trade.—For the fiscal year 1921-22, value of exports \$20,209, of imports \$13,171.

Shipping.—During the fiscal year of 1921-22, 289 vessels, register tonnage 23,286 entered and cleared the port.

Lloyd's Agent.—Roderick McDougall.

Port Morien Harbour, C.B.—East coast—is on the north side of Morien bay, the entrance points of which are cape Percy, the extreme east end of Cape Breton island on the northward, and cape Morien on the southward, $2\frac{1}{2}$ miles apart. The bay extends SW. about $4\frac{3}{4}$ miles from the entrance.

A breakwater originally 1,374 feet long, now 1,120 feet, extends from the NW. shore of the bay from Arnold point about 4 miles SW. of cape Percy. The basin formed between the breakwater and the pier of the Dominion Coal Co. on the same side of the harbour, further inside, is Port Morien harbour, within the basin is from 10 to 17 feet water. The mines are quite close to the wharf.

Ice.—Morien bay rarely freezes over but drift ice arrives about the middle of February and disappears usually about the beginning of May.

Lights.—On Flint island about 2 miles to the eastward of cape Percy, a white, hexagonal, reinforced, concrete tower, with dwelling nearby, shows from a height of 74 feet above high water, a white group flashing light. Diaphone fog signal in connection with light.

A light white fixed is shown from a mast on public wharf at Port Morien.

Bell Buoy.—A red bell buoy marks Cow reef at the north entrance of harbour a little inside cape Percy.

Port Charges are as at other Canadian ports, but vessels using the breakwater for loading or discharging are charged tonnage dues, 6 cents per registered ton, under a special act.

Communication.—Postal and telegraph—is a station on the Sydney and Louisburg Railway. Hendry Ltd. SS. *Arcadia* between St. Peters and the Sydneys, calls weekly.

Shipping.—During the fiscal year 1921-22, 3 vessels register tonnage 243 entered and cleared the port.

Port of North Sydney, C.B.—On NW. side of Sydney harbour inlet, includes the water area within the bar buoys to the head of West arm, its south eastern boundary being the line from Edward point to Victoria pier. North Sydney roads—comprise the water area from a line between Cranberry head and Flat point to the inner NW. bar and SE. bar buoys.

Anchorage.—North Sydney roads afford good open anchorage with off shore winds. There is anchorage in about 5 fathoms, mud, at $1\frac{1}{2}$ to 2 cables off the wharves at North Sydney under the shelter of NW. bar, but some sea with easterly winds.

Anchorage may be obtained in Fishery cove in 6 to 7 fathoms, mud, well sheltered by SE. bar. Vessels anchoring in the roads are exempt from port charges.

Caution.—In North Sydney roads mariners are warned not to anchor north of the line joining Chapel point and the Roman Catholic chapel near Gillivray point.

Lights—Buoys.—For description of lights, buoys, and other aids to navigation within Sydney Harbour inlet, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 40 to 42 inclusive, covering charts No. 2042 and 2727, also department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 43 and 44, covering charts No. 2042 and 2727.

Pilotage is directly under the control of the Minister of Marine and Fisheries as the authority. The payment of pilotage dues is compulsory for certain classes of vessels. The rates are the same as at Sydney. Pilotage dues are paid through the Custom House. The pilotage station for North Sydney is at Cranberry head.

Wharves—Piers.—The Intercolonial Railway pier has a depth of 26 feet at outer end and 20 feet at inner end, with sheds for merchandise.

The Nova Scotia Steel & Coal Co. has 2 large piers. One 900 feet long with depth alongside of 28 feet at low water. The other 650 feet long with depth alongside of 26 feet at low water. A breakwater east of the piers is about 1,500 feet long with a depth at low water of 16 feet for a length of 300 feet.

There are three other wharves, each about 400 feet long, with depths of 16 feet alongside at low water and storehouses.

Patent Slip.—There is a patent slip at North Sydney cradle 100 feet long, lifting power 250 tons.

Repairs.—Well equipped steam forge works effects repairs to hull or machinery of iron vessels, not requiring a dry dock.

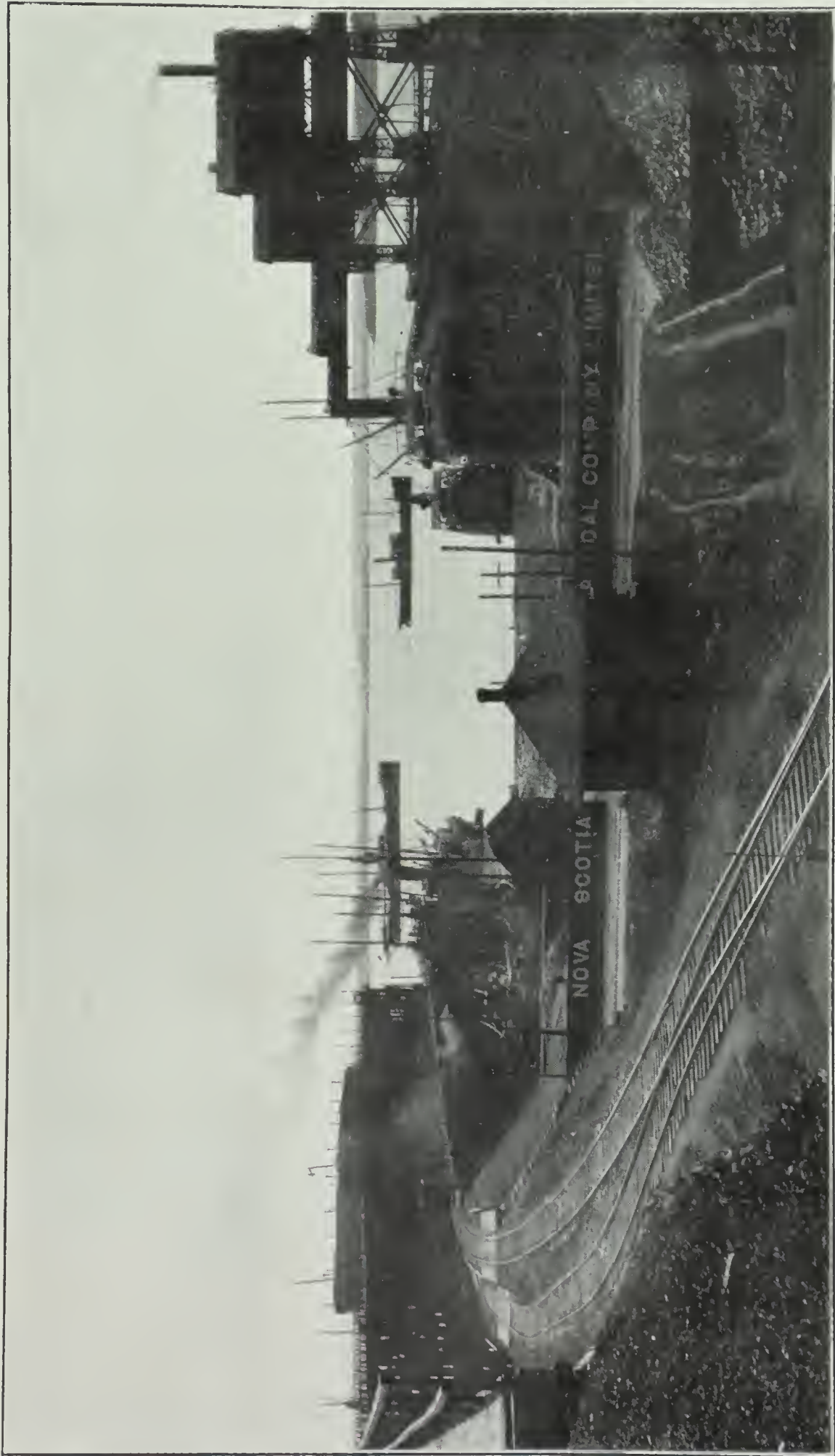
Supplies.—All kinds kept in stock—water from municipality water works or from creek west of town.

Coal.—The best bituminous can be obtained in any quantity. Either the Dominion Coal Co. or the N.S. Steel & Coal Co. can ship 10,000 tons a day.

Coal is shipped at the wharves, where vessels can lie at any time except in very strong easterly winds.

Hospital.—Sick seamen are cared for at the Hamilton hospital, North Sydney.

Wireless Telegraph.—There is a wireless telegraph station at North Sydney, open day and night—call letters V.C.O. Range 100 sea miles.



North Sydney, C.B. Harbour.

Telegraph cables run from North Sydney, thus: two to Placentia, one to St. Pierre, one to Canso.

Storm Signals are exhibited at North Sydney.

Communication.—Is a station on the Sydney branch of the N. S. division of the Canadian National Railways.

Bras D'Or Steamboat Co. calls three times a week.

North Shore SS. Co. calls daily.

Farquhar Co.'s Line from Halifax calls weekly.

Coastal Steamship Co.'s steamer calls fortnightly.

Reid Newfoundland Co., six times a week, and Henry Ltd. SS. *Arcadia* weekly.

The Town of North Sydney, Cape Breton Co., is on the north shore of Sydney harbour and is the terminal point of Newfoundland and St. Pierre traffic. Has all the conveniences of a modern town, electric light and electric cars, public schools, post office, and Customs office, three Canadian banks, five churches, up-to-date stores of all kinds, and wholesale supply houses, daily newspaper.

In 1921 had a population of 6,585.

A modern cold storage plant for bait will be completed in June, 1923.

Trade.—For the fiscal year 1921-22 value of exports \$2,482,112; of imports, \$298,275.

Shipping.—During the fiscal year 1921-22, 1,967 vessels, register tonnage 549,758, entered the port; 1,979 vessels, register tonnage 525,901, cleared.

Lloyd's Agent.—See Sydney.

St. Ann Harbour, C.B.—East coast—is entered from St. Ann bay. Island point on NW. side and Cowdy point on SE. side of the bay are about 3 miles apart; about $2\frac{1}{2}$ miles SW. of Island point, a breakwater of rolled stones and shingle 200 to 400 feet in width and from 5 to 7 feet high, runs out southward for $1\frac{1}{4}$ miles to what is called Beach point on which is a light, the breakwater is termed St. Ann beach, and separates St. Ann bay from St. Ann harbour—besides forming a protection for the harbour, it is used as a highway to the ferry plying between Beach point and Englishtown near Weed point on east side of harbour.

The entrance to St. Ann harbour is between Beach point which is quite bold on the west, and the shoal off Weed point on the east, is only 130 yards wide but carries 11 to 13 fathoms water.

Within the entrance points the harbour runs $4\frac{1}{2}$ miles SW., with a general width of $1\frac{1}{4}$ miles, and a depth of 7 to 9 fathoms, and is completely sheltered. On the west side of harbour, mountains of St. Ann rise abruptly 1,070 feet above the sea.

North arm is on west side of the harbour $2\frac{3}{4}$ miles within the entrance; North river flowing into it can be ascended by boats for 3 miles.

South and Southwest Arms.—Are at the harbour head, parted by McLeod point, on the peninsula between the arms is a kirk and telegraph office and a settlement of Highlanders subsisting by fishing, lumbering, and somewhat indifferent farming.

Anchorage.—The best sheltered anchorage is in the entrance of the North arm.

Lights—Buoys.—There is a light on Beach point and one on Monroe point, the south entrance point of North arm. For description of lights and buoys in harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 32 to 35 inclusive, covering charts No. 2033 and 2727; also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 34, covering charts Nos. 2727 and 2033.

Tides.—At St. Ann harbour springs rise 6 feet, neaps $4\frac{1}{2}$ feet. Rate of tidal streams in entrance from 3 to 4 knots.

Pilotage.—Under St. Ann, Victoria County, Pilotage Authority. The rates are as follows: Vessels of 120 to 200 tons, \$7; 200 to 250, \$8; 250 to 300, \$9; 300 to 350, \$12; 350 to 400, \$13; 400 to 450, \$14; 450 to 500, \$15; 500 to 600, \$16; 600 to 700, \$17; 700 to 800, \$18; 800 to 900, \$19; 900 to 1,000, \$20; 1,000 to 1,500, \$21; 1,500 to 2,000, \$24.

Port Charges.—Harbour master's and sick mariners' dues as regulated by Canada Shipping Act, Chapter 113.

Supplies.—Ordinary supplies obtainable, water can be obtained from torrent in ravine on west shore of harbour, $1\frac{3}{4}$ miles within entrance.

Wharves.—Off Seymour point on west shore of North arm is a wharf 240 feet long with depth of 9 feet at its outer end.

At MacLeod point between Southwest and South arms a wharf 198 feet long extends into 8 feet at low water.

Communication.—There is a post office. North Shore S.S. Co. between Sydney and Bay St. Lawrence calls daily.

St. Peter Bay, C.B.—southeast coast of Cape Breton island runs in about $2\frac{2}{10}$ miles northward of Samson rocks. Its entrance is $1\frac{1}{10}$ miles wide. It may be approached either east or west of Horse Head shoals and Samson rocks.

It has excellent anchorage especially at Grand Greve on the east shore but numerous rocky shoals are scattered over the bay. Vessels entering the bay must use the plan as a guide unless they have local knowledge. The channel principally used is that westward of the middle ground.

St. Peter Canal.—St. Peter canal connects Bras D'Or lake with St. Peter bay, it is about 2,600 feet long, 55 feet wide at water level, and has a depth of 19 feet at lowest water. There is a tidal lock, 48 feet wide and 200 feet long, from gate to gate, with a depth over the sills of 18 feet at lowest water.

Vessels drawing over 12 feet should not use the canal as there is little more than that depth between the northern canal entrance and Campbell island, and the turn there is very sharp.

The canal affords a short and safe route through Bras D'Or to vessels trading to and from Sydney mines.

Ice.—On an average the canal is open from middle of April to middle of January.

Tides.—In the bay rise 6 feet springs, 4 feet neaps.

Port Charges.—Harbour Master's dues.

Lights.—On Cap Rond, west side of entrance to St. Peter bay a white square, wooden tower, dwelling attached, shows from a height of 92 feet above high water a white flashing light.

On Jerome point, near entrance to canal, a white square wooden tower, dwelling attached, shows at a height of 56 feet above high water a red fixed light.

Hand fog horn in connection with this light.

Sydney Harbour, C.B.—East coast—is an inlet extending from its entrance points Flat point on the east and Cranberry head on the west, SW. 5 miles with a general width of $1\frac{4}{10}$ miles, when it divides at Edward point into West arm which continues SW. for $3\frac{3}{4}$ miles to Ball creek, with a general width of $\frac{3}{4}$ of a mile; and South arm which runs south, and SW., with a width decreasing from a mile to $1\frac{1}{2}$ cables.

The navigable channel contracts to the breadth of half a mile between NW. and SE. bars, 5 miles inside Flat point lighthouse.

The harbour is land locked, easy of access and egress, and capable of containing a large number of vessels of any size in safety.

Depths.—The depth in the harbour fairway is from 9 to $6\frac{1}{2}$ fathoms, the least depth of $6\frac{1}{2}$ fathoms is on the leading line about 1 mile seaward of SE. bar.

Anchorage.—The port of Sydney being completely sheltered by SE. bar affords safe anchorage in every part, with deep water close off the wharves of the town; and north of the town and Shingle point, opposite, the depth is 5 to $8\frac{1}{2}$ fathoms, mud, south of this line there are shoals.

Ice.—The harbour is usually open about the 2nd of May and closed about the 25th of February, but the season of navigation is variable.

Tides.—At Sydney springs rise 5 feet, neaps 4 feet.

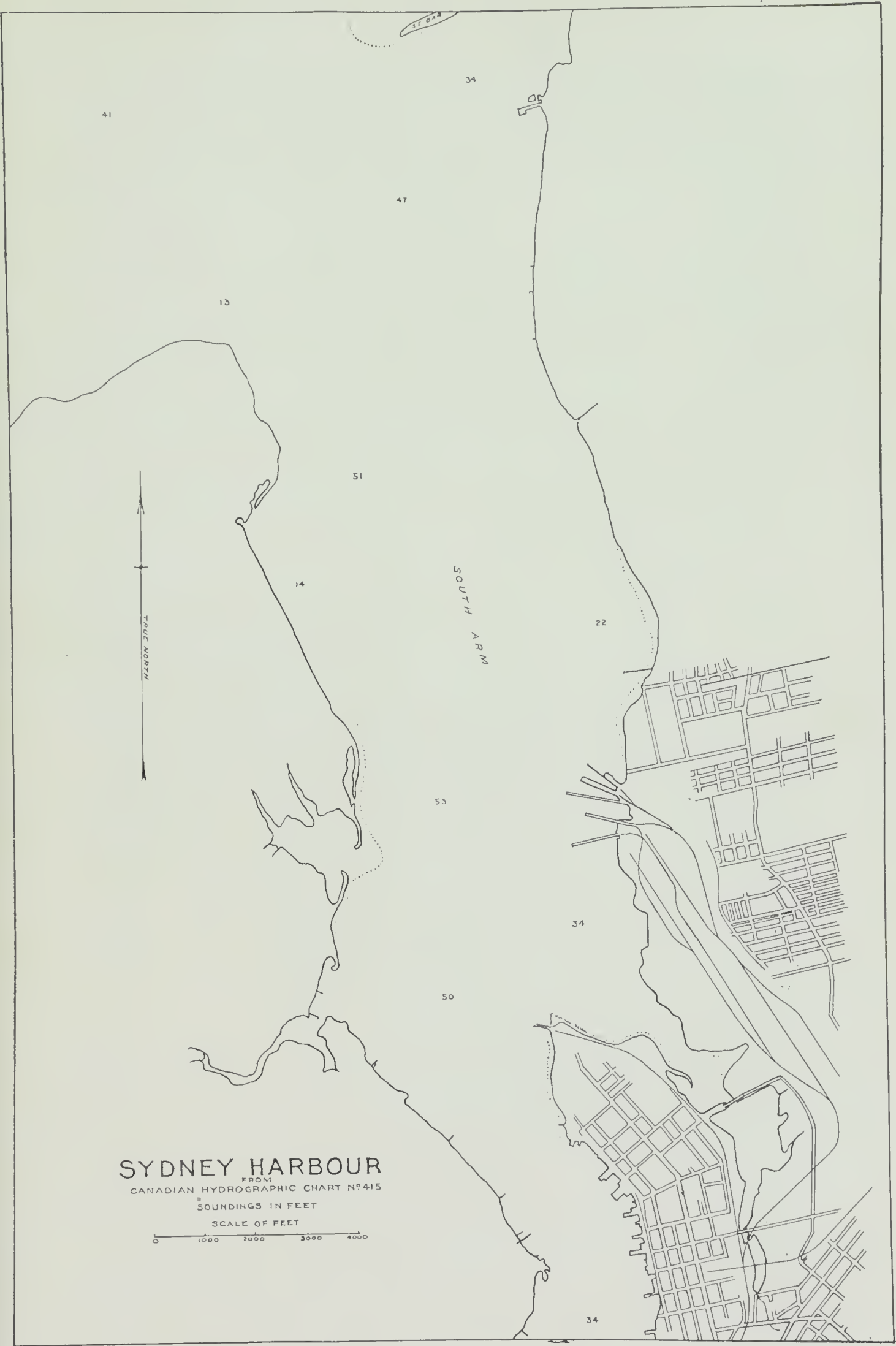
Lights—Buoys.—For a description of lights, buoys, and other aids to navigation and further hydrographic information from Flat point to Sydney, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 40 to 42 inclusive, covering chart No. 2042, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Piers and Wharves.—On NE. side of Wintering cove the Dominion Iron and Steel Co. have extensive works including roller plate mill, blast furnaces, etc., and 2 piers. From No. 1 pier are shipped; steel rails, billets, etc., and it has ample length and water to accommodate a steamer of 10,000 tons. It has 4 towers with a capacity of four tons each.

At No. 2 pier, a vessel of 7,000 tons can be discharged in 10 to 11 hours. It has 6 Hoover and Mason grabs which lift 5 tons each.

Just south of these piers, the Dominion Coal Co. has 3 piers, known as the International piers Nos. 1, 2, and 3.

No. 1 pier is 1,120 feet by 40 feet, with two high level tracks for full cars, and two low level for empties, and 26 feet depth alongside at low water.



No. 2 pier is 1,150 feet long with double tracks, equipped with steel chutes and a Denton hoist.

From this pier 15,000 tons can be loaded in 24 hours, and 4 steamers berthed, loaded or bunkered at a time.

No. 3 pier is 1,350 feet long by 46 feet wide, depth of water at low tide 30 feet, fitted with chutes and belt conveyors—capacity 2,000 tons per hour. Equipped with stand pipes, and hose fed by large fire and steam, and electric driven pumps. The pier has 3 independent tracks on high level, with return track on low level.

All the piers described are electric lighted, and fresh water for drinking and boiler use is supplied from all.

There are several other small piers with a fair amount of warehouse accommodation.

Port Charges.—Are harbour master's fees, as per schedule, save that ships over 1,000 tons pay \$7 instead of \$5 as previously; sick mariners' dues, and Port wardens' fees when surveys are made.

Pilotage is directly under the control of the Minister of Marine and Fisheries as the authority. The payment of pilotage dues is compulsory for certain classes of vessels. The rates are:—

	Inwards.	Outwards.
Vessels under 100 tons.. .. .	\$ 6.00	\$ 6.00
100 tons to 150 tons.. .. .	7.00	4.00
150 " " 200 "	8.00	8.00
200 " " 250 "	9.00	9.00
250 " " 300 "	10.00	10.00
300 " " 350 "	11.00	11.00
350 " " 400 "	12.00	12.00
400 " " 450 "	13.00	13.00
450 " " 500 "	14.00	14.00
500 " " 550 "	15.00	15.00
550 " " 600 "	16.00	16.00
600 " " 650 "	17.00	17.00
650 " " 700 "	18.00	18.00
700 " " 750 "	19.00	19.00
750 " " 800 "	20.00	20.00
800 " " 900 "	21.00	21.00
900 " " 1,000 "	22.00	22.00
1,000 " " 1,100 "	23.00	23.00
1,100 " " 1,200 "	24.00	24.00
1,200 " " 1,300 "	25.00	25.00
1,300 " " 1,400 "	26.00	26.00
1,400 " " 1,500 "	27.00	27.00
1,500 " " 1,600 "	28.00	28.00

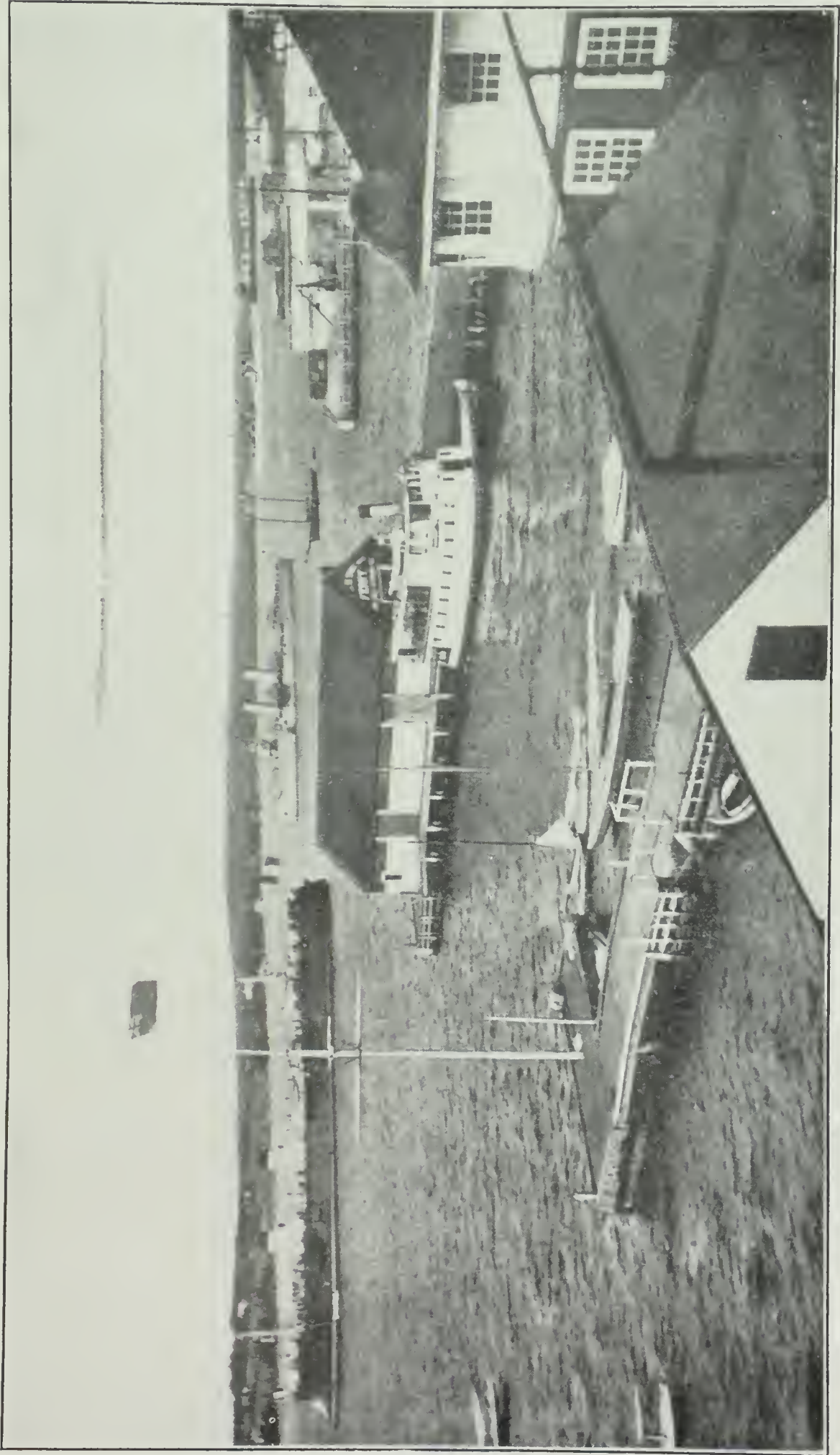
and for every additional 100 tons or fraction thereof, \$1 inwards and the same outwards.

Special rates to ships engaged in carrying coal, limestone, iron ore, or iron products owned or time chartered by the producers of coal or the manufacturers of iron or steel doing business within the Pilotage District of Sydney, as follows:—

Vessels up to 800 tons a flat rate of \$20 inwards and the same outwards;
For every additional 100 tons or a fraction thereof 50 cents inwards and the same outwards.

Movages: Movages are optional within the port, though if a pilot's services are used a flat rate of \$10 per move will be charged.

Pilotage dues are paid through the Custom House.
Pilotage station for Sydney is at Cranberry head.



Sydney, C.B., Harbour.

Supplies—Coal.—Supplies of all sorts are plentiful and good—and coal and water can be obtained in quantity—the last from watermains on the wharves—or steam water tanks on east and west sides of South arm. The Nova Scotia Steel and Coal Co. and the Dominion Coal Co. can load 10,000 tons a day.

Ferry.—A steam ferry runs between Sydney and North Sydney.

Storm Signals are exhibited at Sydney.

Hospital.—A marine hospital is maintained at Sydney.

Repairs.—There is no dock at Sydney, but good facilities for repairs.

Quarantine.—There is a quarantine hospital on the west shore of the South arm between Edward and Keating points. The quarantine wharf extends 148 feet into 8 feet at low water. There are special regulations for vessels from West Indian ports obtaining pratique.

Communication.—Sydney has telegraphic communication with the Dominion, and rail connection via Tupper point, Gut of Canso ferry, and Truro to Halifax.

STEAMSHIP LINES TRADING FROM SYDNEY WITH THEIR ROUTES

Black Diamond Line.. . . .	Newfoundland and coastwise.
Bras D'Or Steamship Co.. . . .	Sydney, Baddeck and Whycocomagh.
Coastal Steamship Co.. . . .	Sydney, Bras D'Or Lakes and west coast of Cape Breton.
Farquhar & Co. Line.. . . .	Passengers and freight, Sydney and Newfoundland.
Lemorue Francise Co.. . . .	Passengers and freight between Sydney and St. Pierre, Miquelon.
North Shore Steamship Co.. . . .	Sydney, St. Anns, Ingonish and Bay St. Lawrence.
Reid Newfoundland Co. Line.. . . .	Passengers and freight between Sydney, Pt. aux Basques and St. John's, Nfld.
Richmond S.S. Co.. . . .	Sydney, Bras D'Or Lakes.

The City of Sydney, Cape Breton Co., is built on a peninsula—between Wintering cove and South arm—about 55 feet high, it contains many fine buildings, including 7 churches, court house, academy, and post office. The Dominion Iron and Steel Co. have an extensive plant for the manufacture of iron and steel products on Wintering cove. It is the shipping port for several coal mines. The town of Sydney Mines is on the NW. shore of the harbour, 1½ miles within Cranberry head.

The population of Sydney in 1921, was 22,545, of Sydney Mines 8,327. In 1920 Sydney had 122 industrial establishments, employing 2,929 hands, total value of products \$37,567,205. In the same year Sydney Mines had 15 industrial establishments, employing 314 hands, total value of products \$4,492,856.

Trade.—For the fiscal year 1921-22, the value of Sydney's exports was \$4,373,860, of its imports \$1,356,609.

Shipping.—During the fiscal year 1921-22, 1,772 vessels, register tonnage 1,394,706, entered the port; 1,766 vessels, register tonnage 1,396,504, cleared.

Lloyd's Agents.—Joseph Salter & Sons, North Sydney (Cape Breton).

West Arichat Harbour, C.B.—south coast, lies NE. of Crichton island and 2 miles westward of Arichat. The approach from the westward leads over a bar with 15 feet at low water running NW. from Arichat head, the west end of Crichton island.

The entrance to the inner harbour northward of Crichton island is between the spit off Crichton point, the north of point of Crichton island, on the west, and Bosdet point on the east, and is $1\frac{1}{2}$ cables wide. Within the entrance is secure anchorage in $3\frac{1}{2}$ fathoms. The east end of the harbour is closed by a bar of shingle.

Lights.—On Crichton head, a white, square, wood tower shows from a height of 29 feet above high water, a white occulting light.

On outer end of wharf at Bosdet point, a white mast shows from a height of 38 feet above high water, a white fixed light.

Leading Lights.—A white, square, wood tower, $\frac{1}{4}$ mile to northward of Bosdet point, shows from a height of 29 feet above high water, a red fixed light.

On shore of mainland, 600 yards 62° true from preceding light. A similar tower shows from a height of 37 feet above high water, a white fixed light.

Buoys.—A red conical buoy marks the SE. side of the bar channel and a black spar buoy the NW. side.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 123 and 124, covering chart No. 2756.

Wharves.—Off Crichton point is a wharf and stores. Off south extreme of Bosdet point is a wharf 240 feet long, running southward.

Communication.—Postal and telegraph, nearest railway station at Grande Anse.

Halifax and Sheet Harbour SS. Co's steamer *Margaret* calls weekly. SS. *Arichat*, between Mulgrave and Arichat, calls daily.

Whycocomagh Harbour—is on the north side of the bay of the same name which runs north from St. Patrick channel near its west end. An approach channel 1,100 feet long and 100 feet wide, has been dredged to a depth of 13 feet to the village—and a basin 300 feet long and wide,—the channel is marked by buoys.

Light.—On Frazer point 2 miles SE. of Whycocomagh, a mast, with shed at base, shows from a height of 31 feet above high water, a white fixed light.

Wharf.—At Whycocomagh is a wharf 228 feet long, with depth of $12\frac{1}{2}$ feet at its outer end at low water.

Communication.—The village has a post office. Bras D'Or Steamboat Co. to Sydney calls 3 times a week. Hendry Ltd. SS. *Arcadia* between St. Peters and the Sydneys calls weekly. Nearest railway station is Orangedale.

PRINCE EDWARD ISLAND.

Boughton River or Grand River Harbour, P.E.I.—east coast—is at the mouth of Boughton river flowing into the NW. part of Boughton bay, the next large bay on the coast NE. of Cardigan bay. The entrance to the harbour is between Banks point on the north and a long spit running northerly off Solander point on the south called Old Ferry spit, the width between these points being $1\frac{3}{4}$ cables.

One mile out from the entrance is a dangerous sand bar marked by 3 buoys over which 6 feet of water, in ordinary low water springs can be carried.

Immediately within the entrance the harbour is 1 mile wide, but the channel narrow and intricate is marked out by stakes between sandy shoals for 1 mile, after which it is clear, wide, and has 3 to 5 fathoms water to the narrows, 3 miles above the entrance. There are settlements on each side of the harbour.

Wharves—At Annandale village just inside Banks point on north shore, is a wharf 400 feet long with a frontage of 140 feet on the channel, and a depth of 7 feet at low water.

Chapel wharf on the south side of the harbour, 3 miles within the entrance, is 293 feet long, with depth of 9 feet at its outer end.

Lights.—In Annandale village 100 yards from shore end of wharf, a white, square, wood tower, red slatted beacon on top with white diamond, shows from a height of 35 feet above high water a white fixed light.

On Juniper point, 303° true, 4,694 feet from front light, a white, square, wood tower, shows from a height of 78 feet above high water, a white fixed light. The lights in line 303° true lead over the bar.

Beacon.—A diamond shaped white beacon 13 feet high is on a sandbank on the northern side of the channel SE. of the frontlight.

Tides.—Springs rise 5 feet, neaps $3\frac{1}{2}$ feet at Annandale wharf.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 168, covering charts Nos. 2034 and 2005.

Cardigan River Harbour, P.E.I.—east coast is at the mouth of the Cardigan river and entered from Cardigan bay, the entrance points of which Boughton point on the NW., and Panmure head of Panmure island on the SW. are about $3\frac{1}{2}$ miles apart, the bay extends NW. for 4 miles to the mouth of the river, and affords good anchorage with off shore winds in 6 to 10 fathoms mud.

Cardigan point about $2\frac{1}{4}$ miles northward from Panmure head is the west entrance point of Cardigan River harbour, and the river is navigable for 5 miles above the point for large vessels and 7 miles for smaller vessels. The entrance to the river is contracted by McPhie shoal and Maitland flat to a width of 2 cables—depth 7 fathoms.

Lights—Buoys.—For a description of lights, buoys, and other aids to navigation in Cardigan River harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages

169 and 170, covering chart No. 2034, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions for Entering Harbour.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 169 and 170, covering chart No. 2034.

Wharves.—At Cardigan bridge about 7 miles up from the mouth of the river are 4 wharves with 2 feet at low water.

Port Charges.—Are harbour master's and sick mariners' dues and wharfage.

Pilots can be obtained by signalling.

Communication.—Postal and telegraph, and a station on the P.E.I. division of the Canadian National Railways.

Shipping.—During the fiscal year 1921-22, 38 vessels, register tonnage 3,604, entered the port; 36 vessels, register tonnage 3,316, cleared.

Cascumpeque Harbour, P.E.I.—north coast—is about $5\frac{1}{4}$ miles in a south-westerly direction from cape Kildare and forms the north part of Cascumpeque bay. Cascumpeque narrows extends from Cascumpeque bay to Malpeque bay to the southward. The narrows is a shallow stretch of water between the sand dunes on the coast and the sand bars off it, varying in width from 1 mile to $\frac{1}{2}$ mile.

The harbour is of considerable extent, with good depths and well sheltered, but its approach is obstructed by outlying shifting sand bar—is much used as a harbour of refuge by coasters and fishing boats.

The entrance to the harbour is $1\frac{3}{4}$ cables wide between two sand bars with 10 feet depth at low water. An outer bar of sand lies $1\frac{1}{4}$ miles off the entrance to seaward and has a depth of 10 feet at low water in a very narrow channel. In easterly gales the bar is a mass of breakers. The channel from the outer to the inner bar is 1 cable wide between sand banks. Within the entrance there is plenty of water and a clear channel which runs SW. one mile and then turns southward within Savage island.

Anchorage.—In fine weather there is good anchorage off the outer bar in 6 fathoms and tolerable anchorage in the channel between the outer and inner bars in $2\frac{1}{2}$ to 3 fathoms, sand. There is good anchorage in the channel within the entrance in from 3 to 5 fathoms.

Tides.—Springs rise 3 feet, neaps $2\frac{1}{2}$ feet, but the rise is irregular. Tidal streams at entrance of harbour usually run $1\frac{1}{2}$ knots, but sometimes 4 knots.

Ice.—The harbour freezes over about 3rd January and is clear of ice about 6th of April.

Lights—Buoys.—For description of lights and buoys in harbour, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 190, covering chart No. 2034; also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 191, covering chart No. 2034.

Port Charges.—There is a harbour master and usual port charges.

Alberton—Prince Co., is a small town on the north shore of the harbour, and a station on the P.E.I. division of the Canadian National Railways. The

dwellings are chiefly of wood, it has churches, a courthouse, and a wharf 175 feet long, with freight house and sidings; depth alongside, 8 to 12 feet.

Northport lies southward of Alberton where there is also a wharf.

Lifeboat.—There is a lifeboat station and rocket apparatus at Alberton.

Shipping.—During the fiscal year 1921-22, 13 vessels, register tonnage 467, entered and cleared Alberton.

Charlottetown Harbour, P.E.I.—south coast, is entered from Hillsborough bay between Sea Trout and Blockhouse points $4\frac{1}{2}$ cables apart. The navigable width of the channel, which has a depth of 7 to 13 fathoms, is $2\frac{1}{2}$ cables. This is the outer harbour.

The inner harbour is entered between Battery point on the east and Canseau point on the west. York river flows into the harbour from the north, Hillsborough river from the NE., and Elliott river from the west.

The confluence of the streams of these 3 rivers between Canseau spit and the mouth of the York river forms the Three Tides, where there is good anchorage in from 9 to 4 fathoms, but the usual anchorage is off the town wharves, where the channel is $2\frac{3}{4}$ cables wide carrying depths of from 7 to 10 fathoms.

Lights—Buoys.—For a description of the lights, buoys, etc., in the outer and inner harbours see Admiralty 1916 "St. Lawrence Pilot," Vol. 2, pages 253 to 255, inclusive, covering chart No. 1709; also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Caution.—The buoys in Hillsborough bay and Charlottetown Harbour are frequently out of position, therefore use the leading marks and lead.

Ice.—The harbour is usually frozen over about 21st December and clear of ice 7th April.

Tides.—Rise $9\frac{1}{2}$ feet springs, 8 feet neaps, as a rule, but are affected by NE. and SW. gales.

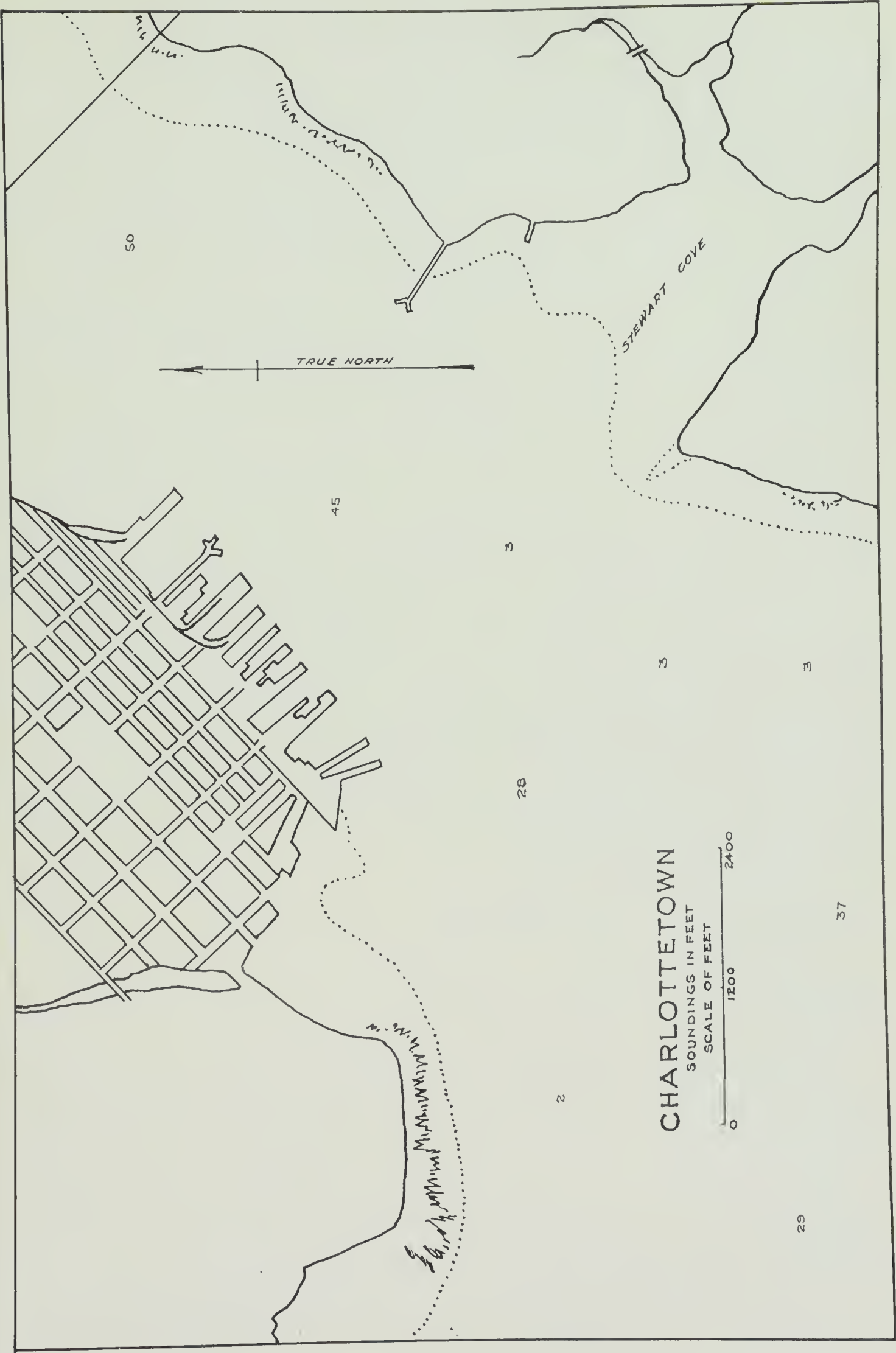
Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 256 and 257, covering chart No. 1709.

Pilots.—There are no licensed pilots at Charlottetown and pilotage is non-compulsory.

Port Charges.—Usual harbour master's and sick mariners' dues.

Wharves.—Eleven wharves are built out to the channel. Starting from the east side of the town and working west the most important one is the Railway wharf, with 24 feet water at low tide. The Steam Navigation Co.'s wharf owned by Bruce Stewart & Co. has slightly less water alongside and large freight shed. The Marine and Fisheries wharf has 20 to 24 feet water on each side, where vessels lie, and freight sheds for receiving cargo. All these wharves have rail connection. Other wharves, privately owned, are from 300 to 500 feet long with freight sheds. Immediately west of the Railway wharf is a ferry wharf for accommodating a ferry steamer.

Communication.—The P.E.I. Railway runs into Charlottetown, has telegraphic communication with the general system. During the navigation season, a steamer runs to Pictou 5 days a week; a steamer to and from Montreal and



Pictou calls fortnightly each way, and steamers of the Plant line run between Charlottetown and Boston twice a week each way.

Hospital.—Sick seamen are treated in Charlottetown hospital.

Quarantine.—Charlottetown is a minor quarantine station.

Life Boat.—There is a life boat at Charlottetown.

Storm Signals are exhibited at Charlottetown.

Coal.—About 11,000 tons of soft Nova Scotia coal are imported annually, 3,000 tons being usually kept in stock. Two hundred tons can be put on board in 24 hours. The coaling wharf is 250 feet long with 20 feet alongside at low water.

Supplies.—Meat, vegetables and bread are plentiful and good; good water in large quantities from stand pipes on wharf, or from boats filled as tanks, and all kinds of other supplies, may be obtained at Charlottetown.

Repairs.—Small repairs can be made to machinery and boilers.

Tugs.—There are four tugs at Charlottetown.

The Town.—The capital of P.E.I. is on right bank of Hillsborough river $2\frac{1}{2}$ miles inside the harbour entrance.

It is well laid out in squares with wide streets at right angles to each other, has gas, electric light, good waterworks, and contains 8 churches, a bank, numerous factories, and has 3 daily newspapers. Westward of the town are Government House and Victoria Park. The railway station is at the east end of the town, and a railway bridge on 11 piers spans the Hillsborough river close east of the town.

The Provincial building is in the middle of the public square, and is flanked by the law courts and post office.

On a hill $1\frac{1}{2}$ miles north of the town and 150 feet high is St. Dunstan Roman Catholic college.

In 1920 Charlottetown had 76 industrial establishments employing 642 hands, value of products \$2,998,810.

Population in 1921: 12,347.

Trade.—The exports are chiefly butter, cheese and potatoes. For the fiscal year 1921-22, value of imports \$854,250; of exports \$250,224.

Shipping.—During the fiscal year 1921-22, 874 vessels, register tonnage 161,059, entered the port; 866 vessels, register tonnage 159,997, cleared.

Lloyd's Agents.—Hyndman & Co., Ltd., 61 Queen street.

Cove Head Harbour, P.E.I.—North coast, about $\frac{1}{2}$ mile west of cape Stanhope and inside it is about 4 miles long and from $\frac{1}{2}$ mile to 1 mile in width. Is navigable for small vessels over most of its extent, the depth on the outer bar is only $3\frac{1}{2}$ feet at low water.

Leading Lights.—A white fixed light is shown from a mast 17 feet high on the point at shore end of breakwater, south of point at the east side of the harbour entrance.

A white fixed light is shown from a mast 29 feet high, 162 feet, $186^{\circ} 30'$ true from front light. Lights liable to be moved to suit changes in channel.

Crapaud Road, P.E.I.—south shore, is a small but secure anchorage off the mouth of Brocklesby river and between the eastern part of Tryon shoals and the land.

The anchorage space is about half a mile long and 2 cables wide in 12 to 15 feet at low water, but for small craft is more extensive. The entrance between the eastern point of Tryon shoals and the shallow water off the mainland shore is 180 feet wide and carries 9 feet at low water springs, but the east end of Tryon shoals is extending.

Channel and Basin.—A dredged channel 50 feet wide with the depth of $6\frac{1}{2}$ feet extends northward $3\frac{1}{2}$ cables from 3 cables eastward of Paul bluff, north of Tryon shoals, to a dredged basin with a depth of 8 feet off Victoria village.

Tides.—Springs rise 8 feet, neaps 6 feet.

Victoria Village.—At the mouth of Brocklesby river on north side of harbour—is an important place of shipment being the outlet of a fertile country side—has a pier, 486 feet long with depth of 9 feet at end at low water,—a bridge crosses the Brocklesby river from Victoria to Beacon point opposite—has post office. Bradalbane on the P.E.I. division of Canadian National Railways is the nearest railway station.

Lights—Buoys.—For description of lights and buoys in Crapaud road, see 1916 Admiralty “St. Lawrence Pilot,” Vol. 2, pages 260 and 261, covering chart No 2034, also Department’s 1923 “List of Lights and Fog Signals on Atlantic Coast”.

Directions.—See 1916 Admiralty “St. Lawrence Pilot,” Vol. 2, page 261, covering chart No. 2034.

Port Charges.—A harbour master and usual port charges.

Shipping.—During the fiscal year 1921-22, 78 vessels, register tonnage 13,735 entered and cleared the harbour.

Georgetown Harbour, P.E.I.—sometimes called Three Rivers—east coast is south of Cardigan river harbour and separated from it by Cardigan point headland.

It extends NW. from the SW. part of Cardigan bay, and has space and depth sufficient for large vessels.

The entrance to the harbour with depth of over 3 fathoms is through the shoals between Panmure island to the south, and Cardigan point to the north, and is $2\frac{1}{2}$ cables wide. Knoll shoal with 9 feet least water, just outside the entrance of Georgetown harbour narrows the entrance at that point to 2 cables.

Between Thrumcap islet off the west point of Cardigan point headland and St. Andrew point on the SW. shore the passage is $6\frac{1}{2}$ cables wide but diminished by shoals to a width of $2\frac{1}{4}$ cables.

Inside Thrumcap islet on the north shore is a bay from the NW. point of which, Gaudin point, a sand spit, runs southward a quarter of a mile. A shoal runs 1 to $2\frac{1}{2}$ cables off the southern shore from St. Andrews point to Aitkins point, next point NW., and then continues westward to the entrance of Montague river.

Between Gaudin spit and Aitkins point the channel is $1\frac{3}{4}$ cables wide and carries $6\frac{1}{2}$ fathoms water, but it expands again within the spit.

Anchorage.—The best anchorage for large vessels in Georgetown harbour is between Thrumcap spit and Gaudin point spit in 5 fathoms. There is also good anchorage all the way to Brudenell point, the north entrance point of Brudenell river one mile above Georgetown.

Tides.—Springs rise 5 feet, neaps $3\frac{1}{2}$ feet. The rate of tidal streams does not exceed $\frac{3}{4}$ of a knot.

Ice.—Georgetown harbour usually freezes on or about 26th December and is clear of harbour ice by 21st April. Field ice comes in till the end of April.

Lights—Buoys.—For description of lights, and buoys in Georgetown harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 170 to 172 inclusive, covering chart No. 2034, also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast".

Directions.—See 1916 Admiralty "St. Lawrence Pilot" page 173, covering chart No. 2034.

Port Charges.—Harbour master's and sick mariners' dues as specified in Canada Shipping Act, Chapter 113.

Pilotage.—Services of pilots can be procured by signalling. Strange vessels of large size are recommended to take pilots if beating into the harbour.

Wharves.—The railway wharf at Gaudin point is 800 feet long by 90 feet with freight sheds, with depth of 20 feet at outer end, and from 23 feet to 10 feet on its west side; steamers load and discharge by their own steam. A government wharf called Kings wharf has depth alongside of 18 feet. There is also a town wharf and four other small ones.

A pier 390 feet long with 10 feet at outer end at low water runs out from Aitkins point south shore of harbour.

Supplies.—General supplies obtainable and fresh water from wells.

Coal.—About 300 tons usually in stock, vessels drawing less than 19 feet coal alongside railway wharf.

Storm Signals are shown at Georgetown.

Communication.—Telegraphic and postal—is a station on the P.E.I. division of the Canadian National Railways. Steam communication with Pictou once a week during season of navigation, and in winter when possible by icebreaker.

The Town is built on Cardigan point headland just eastward of Gaudin point on north shore of harbour—has 2 churches—and a courthouse. Population about 1,000.

Shipping.—During the fiscal year 1921-22, 166 vessels, register tonnage 12,453 entered the port, 163 vessels, register tonnage 12,366 cleared.

Malpeque Harbour, P.E.I.—north coast—is just southward of Cascumpeque narrows, and the NW. entrance point is Billhook island and the SE. one Cape Aylesbury, $1\frac{1}{2}$ miles apart.

The harbour extends into Malpeque bay, which is of great extent, running across the island to within $2\frac{1}{2}$ miles of Bedeque harbour, and also NW. for 10 miles, and containing a number of islands. Has depth of 12 feet at low water springs over it.

A bar at the entrance of the Ship channel into the harbour runs out nearly 2 miles eastward of Billhook island, and then turns southward to the shore eastward of cape Aylesbury.

The narrowest part of the ship channel is one cable wide and carries 3 to 4 fathoms water, but there is a 13-foot patch between the outer and inner bars.

The inner bar is a quarter of a mile farther in with 19 feet at low water.

Within Malpeque harbour there is space and depth for a large number of vessels, the bar outside breaking the sea.

Anchorage.—There is temporary anchorage outside the bar in 5 to 7 fathoms, and within Malpeque harbour there is well sheltered anchorage in from 3 to 10 fathoms.

Tides.—Springs rise 3 feet, neaps 2 feet. Tidal streams in the entrance attain a rate of $2\frac{1}{2}$ knots at springs.

Ice.—The bay freezes over about the middle of December, and is not clear of field ice until the 1st of May.

Light—Buoys.—There is a light $6\frac{1}{4}$ cables SE. of cape Aylesbury and leading lights on Billhook or Fish island; for further description of lights and buoys, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 186, covering chart No. 2034; also Department's 1923 "List of Lights and Fog Signals on Atlantic Coast."

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 187 and 188, covering chart No. 2034.

Settlements.—About 2 miles southward of Darnley point, near cape Aylesbury—is Malpeque settlement, one of the oldest on the island—the spire of the Roman Catholic church and twin spires of the Roman Catholic college to eastward of the church are conspicuous marks.

Other settlements at the head of Malpeque bay are St. Eleanor and Mis-couche on ridge between Malpeque and Bedeque bays. On NW. part of the bay are Grand River and Port Hill.

Port Charges.—A harbour master and usual port charges.

Supplies.—Fresh provisions are obtainable and water from wells—which, however, takes some time.

Miminegash Pond, P.E.I.—North-west coast is inside Miminegash reef a ledge of rocks nearly dry at low water, 1 mile in length, parallel to the shore.

Breakwaters on either side of the entrance 56 feet apart confine the channel. The northern breakwater is 550 feet long, the southern one 350 feet long. The pond is only available for small craft, and the channel is difficult to dredge. Usually the harbour is open from end of April to first week in December.

Anchorage.—There is good anchorage with off shore winds for small vessels, in 3 fathoms, 5 cables NW. of north breakwater.

Buoys.—The southern channel inside Miminegash reef is marked by 3 spar buoys; and the northern by 2 spar buoys.

Leading Lights.—On outer end of south breakwater a white square wood tower shows from a height of 23 feet above high water, a red and white sector fixed light.

On crib on beach 720 feet, 168° true from front light, a similar tower shows from a height of 36 feet above high water, a white fixed light. The lights in line lead to the entrance to pond between the breakwaters.

Miminegash Village.—There is a village at Miminegash and four vessels are owned in the port and trade from it taking away P.E.I. produce and bringing back lumber, salt, and fishermen's supplies.

Montague River Harbour, P.E.I.—east coast is at the mouth of the Montague river flowing into Cardigan bay from the westward, the southernmost of the three rivers flowing into Cardigan bay, the other two being Brudenell and Cardigan rivers.

The entrance points are Brudenell point on the north and Aitkins point on the south about $\frac{1}{2}$ mile apart. A depth of 20 feet can be carried from the mouth to the bridge 4 miles up.

Buoy.—A black barrel buoy is moored in depth of 10 feet, on south side of Montague river about $1\frac{1}{2}$ miles up.

Wharves.—There are 3 private wharves and a government wharf, water alongside 14 feet.

Communication.—Postal and telegraph, and station on P.E.I. division of Canadian National Railways, Montague junction branch.

Shipping.—During the fiscal year 1921-22, 114 vessels, register tonnage 8,173, entered the port; 124 vessels, register tonnage 8,931, cleared.

Murray Harbour, P.E.I.—east coast—is entered between Cody point on the north and Murray head on the south, $2\frac{1}{2}$ miles apart. A sand bar over which 10 feet can be carried at low water ordinary springs, extends between these points, and is impassable in strong easterly winds.

The inner entrance into the harbour is between Old Store or Beach point on the south side of the harbour about a mile from the outer edge of the bar, and the long Sandy spit running SW. from Cody point. The channel just outside Old Store point is only 120 yards wide between sandy shoals, but inside Old Store point it expands again to 2 cables.

The depth inside the bar gradually increases to 6 fathoms close to Old Store point.

Within its inner entrance points the harbour expands into an extensive basin containing five islands, and the South river from the SE., the Fox and Murray rivers from the eastward, and the Mink river from the north empty into the harbour.

There are settlements on the shores of these rivers, the principal one being on the South river, called Murray Harbour South—about 2 miles inside the harbour entrance.

There is a buoyed and staked dredged channel from the mouth of South river to the bridge at Murray Harbour South—about 80 feet wide and carrying 10 feet at low water springs. At Murray river there is also a considerable settlement.

Leading Lights.—On Old Store or Beach point, a white, square, wood tower shows from a height of 23 feet above high water a white fixed light.

On Mainland about 1 mile $234^{\circ} 30'$ true from former light a similar light is shown from a height of 57 feet above high water from a similar tower.

Bell Buoy.—In 7 fathoms, off the bar off entrance to harbour, is moored a red iron bell buoy.

Buoys.—A red conical buoy and a black can buoy are moored on the bar, about 1 cable northward and southward respectively of the leading line of lights.

A similar pair of buoys 150 yards apart mark sides of channel 4 cables from front leading light. Inside Old Store point the main intricate channels are marked by about 30 cask and spar buoys, in accordance with system and coloured stakes mark the smaller channels.

Directions.—See 1916 Admiralty "St. Lawrence Pilot" Vol. 2, page 177, covering charts No. 2034 and 1973.

Tides.—Springs rise $6\frac{1}{4}$ feet, neaps 5 feet. Rate of tidal stream at Old Store point about 2 knots.

Wharves.—In Murray Harbour South are 3 wharves, one with large freight shed on it, depth alongside 15 feet.

In Murray river are 5 wharves, one railway wharf with shed and siding, 3 private wharves and 1 local government wharf, 16 feet average depth alongside all.

In Mink river are 3 wharves, one government owned, and 2 private.

Port Charges.—As at other Canadian ports.

Storm Signals are shown from a mast on Humes hill point.

Wireless Telegraph.—At Cape Bear about 1 mile southward of Murray head is a wireless telegraph station—call letters V.C.P. Range 150 sea miles.

Communications.—Postal and telegraph both at Murray Harbour and Murray river, and they are both stations on the Charlottetown to Murray Harbour branch of the P.E.I. division, Canadian National Railways.

Shipping.—During the fiscal year 1921-22, 73 vessels register tonnage 3,928 entered the harbour; 71 vessels, register tonnage 3,628 cleared.

New London or (Grenville) Harbour, P.E.I.—north coast, is $6\frac{3}{4}$ miles westward of cape Turner. The entrance is 2 cables wide and the harbour inside about 3 miles long and nearly as wide. The entrance is obstructed by a shifting sand bar which has breakwater on either side. There is 10 feet water over the bar at ordinary tides. The bar extends out 7 cables from the entrance, and shallow water 1 mile.

Four rivers—Hope, South-West, Stanley and French, flow into the harbour, and are navigable for short distances.

Tides.—Springs rise $3\frac{1}{2}$ feet, neaps $2\frac{3}{4}$ feet.

Lights.—Front light—on outer end of breakwater, NW. side of entrance, a white, square, wood tower shows from a height of 24 feet above high water, a white fixed light.

On beach 1,500 feet, $201^{\circ} 30'$ true, from front light, a white, square, wood tower, with dwelling attached, shows from a height of 42 feet above high water a red fixed light. Outer range light liable to be moved to suit shifting of channel.

Directions.—Without local knowledge the harbour should not be attempted without a pilot—buoys at entrance to harbour and at each side of entrance to French river, mark the channel.

The lights in line lead over the bar.

Port Charges.—Harbour master and usual port charges.

Supplies.—Are obtainable at the general stores.

The Village of New London.—Queens Co., is on the west shore of the harbour, $1\frac{1}{2}$ miles within the entrance, has Anglican and Presbyterian churches, 3 general stores, and has a post office; nearest railway station, Kensington on the Prince Edward Island division of the Canadian National Systems. New London has a considerable coasting trade, and cod, mackerel, lobster, and herring fishing are carried on very extensively.

Rustico Harbour, P.E.I.—north shore; has its entrance at the west end of McAuslin island. Works have been built at each side of the entrance and there is now a depth of 8 to 9 feet at high tide over the bar. The narrow entrance to Little Rustico harbour is at the east end of McAuslin island, and there is a pier at the mouth of Wheatley river flowing into the harbour.

Lights.—On beach inside breakwater a white, square, wood tower shows from a height of 36 feet above high water a white fixed light.

Leading Lights.—Outer range—Two white fixed lights are shown from masts 250 feet apart, on beach west side of entrance to harbour.

Inner Range—Two red fixed lights are shown from masts, 300 feet apart, on west side of entrance to harbour.

These outer and inner range lights are subject to alteration to suit the channel.

Buoys.—Off the entrance to the harbour is a red steel, cylindrical bell buoy.

The dredged channel 50 feet wide over the bar at the entrance to the harbour is marked by 2 cask buoys, 1 black and 1 red, at the outer end, and also the inner end, and 1 black and 1 red spar buoy halfway between the pairs.

Tides.—Rise springs 4 feet; neaps 3 feet.

Directions.—Vessels entering Grand Rustico harbour should keep the line of the outer range lights bearing 167° true until it intersects that of the inner range lights, 220° true, which latter guide to the harbour anchorage. Local knowledge is necessary.

Communication.—Rustico has a post office, but no railway station, the nearest station is at Hunter River on the P.E.I. division of the Canadian National system; about 10 miles inland.

The Village of Rustico is an important fishing station, 50 boats employing 200 men fish out of it. The lobster canneries bring in about \$75,000 yearly, from shipments to Britain, about \$50,000 worth of mackerel and cod are taken yearly, half of which are shipped to Halifax.

Souris Harbour, P.E.I.—east coast, is on the east side of Colville bay, which has for entrance points Swanton point and Souris head, $1\frac{3}{4}$ miles apart and at the mouth of Colville river, an inlet to the sea. It is a harbour of refuge and place of shipment.

The bay is about 1 mile broad and $\frac{1}{2}$ mile deep, with no dangers, and affords good anchorage in off shore winds, but is open on the SE.

The harbour is protected by a breakwater 550 yards long by 40 feet wide, ballasted with P.E.I. soft red sandstone which is being washed away by the action of the sea, and a bank of silt has accumulated about 400 feet inside the breakwater and about 25 feet off it, which forms an obstruction to navigation.

There is a dredged channel 800 feet long by 80 feet wide from the breakwater to the end of the Railway wharf, with about 15 feet at low water.

The east entrance is marked by a red flagstaff and 3 black buoys mark the passage up river for small craft.

Tides.—Rise $4\frac{1}{2}$ feet springs, 3 feet neaps.

Ice.—The harbour usually freezes on or about the 7th of January, and breaks up about the 6th of May.

Lights.—On Knight point, a white, square, wood tower shows from a height of 86 feet above high water, a white, group flashing light.

On outer end of Souris breakwater, a red, square, steel skeleton tower, topped by a white, wood watchroom, shows from a height of 40 feet above high water a red fixed light.

A white fixed light is shown from the outer end of freight shed on railway wharf.

Storm Signals are shown at Souris.

Lifeboat.—A lifeboat is stationed at Souris.

Wharves are: railway wharf, 700 feet by 80 feet, 200 feet inside the breakwater, with 15 feet alongside at low water; a warehouse 100 feet by 40 feet is on the wharf, with railway tracks on each side.

Matthews and McLean's wharf, 400 feet by 40 feet, has 13 feet at low water, alongside, five warehouses on this wharf, and a basin with 10 feet at low tide.

Between the Railway wharf and Matthews & McLean's wharf, is the large warehouse of J. J. Hughes for storage of grain, etc.

Port Charges.—Harbour master and usual port charges.

Communication.—Postal and telegraph, is the eastern terminus of the P.E.I. division of the Canadian National Railways. SS. *R. W. Hendry*, between Pictou, N.S., and Magdalen islands, calls weekly.

The Village of Souris, King's Co.—on east shore of Colville bay—had in 1921 a population of 1,094, has 3 large fish curing establishments; the chief industry is fishing.

The Roman Catholic church is a conspicuous mark.

Shipping.—During the fiscal year 1921-22, 191 vessels, register tonnage 45,944, entered and cleared the port.

Summerside Harbour, P.E.I.—south coast—is entered from Bedeque bay through Phelan point on the north and Indian head on the south, $1\frac{3}{10}$ miles apart. The spit off Indian head and shoal water off the opposite shore leave a channel into the harbour about 500 feet wide with least depth of 18 feet—N.W. of Holman's island 11 cables eastward of Indian head, Island shoal extends for 5 cables.

The channel passes northward of this shoal, and then turns southward, east of Holman's island, where vessels may lie, landlocked, in 5 fathoms of water. The harbour within Indian point lighthouse up to the town wharves is from 400 to 1,200 feet wide, with least depth of 3 fathoms.

Wilmot river flows into the harbour at its NE. end and Dunk river at the SE. end.

A channel 2,700 feet long and 250 feet wide, has been dredged to a depth of 12 feet at low water, from deep water in Dunk river to Hird point on south shore of the river, and about $2\frac{1}{2}$ miles southward of the town at Hird point is a pier 510 feet long, which is an important shipping place for agricultural products.

Breakwater.—A breakwater about 3,200 feet long is built out in a northerly direction from Indian Head point, with lighthouse and fog signal at its outer end.

Lights—Buoys.—For description of lights, and buoys, in Summerside Harbour, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 264 and 265, covering charts Nos. 2034 and 1942.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 265 and 266, covering charts Nos. 2034 and 1942.

Tides.—In Bedeque bay springs rise 7 feet, neaps 5 feet.

Ice.—The harbour usually freezes over about December 11 and is clear of ice by 16th of April.

Port Charges.—Are Harbour master's and sick mariners' dues.

Pilotage.—The services of a pilot may be procured by signalling but there is no pilotage authority at Summerside nor Bedeque.

Wharves.—Working along the Summerside harbour front from NW. to SE. the wharves are (1) The town or Queens wharf, 900 feet long with depths alongside from 20 to 16 feet, freight shed build on wharf (2) R. T. Holman Ltd. private wharf, with depth of 16 feet alongside; upon this wharf is a freight shed and a coal shed with hoisting derrick (3) The Railway or Government wharf is 600 feet long, with 22 feet depth at its end, 20 to 16 feet on east side, and 12 to 6 feet on west side; on this wharf is a freight shed and 2 coal sheds, and 3

tracks connect it with the P.E.I. Railway (4) A private wharf owned by Joseph Reid & Co. with coal shed; this wharf is used by light draught schooners.

Storm Signals are shown at Summerside.

Coal.—Usually about 600 tons of N.S. soft coal in stock and about 1,000 tons maintained by railway. Vessels of 18 feet draught coal alongside Railway wharf. About 3,000 tons of coal are imported annually.

Supplies.—Meat, bread, and vegetables procurable—water from town pumps not good.

Repairs.—No facilities for repairs.

Communication.—Postal and telegraph—is a station on P.E.I. division of Canadian National Railways. Daily connection in summer between Summerside and Pointe du Chene by steamers of Charlottetown Steam Navigation Co. Clarke SS. Co., Ltd., from Montreal to Bay Chaleurs and P.E.I. ports calls fortnightly.

The Town of Summerside is built on the NE. side of the harbour. On Holman's island is a large hotel which has steam ferry connection with the town. Summerside is a favourite summer resort and situated in an exceptionally fine and fertile farming country. Population in 1921 was 3,228.

Trade.—For fiscal year 1921-22, value of imports was \$146,819; of exports \$1,981.

Shipping.—During the fiscal year 1921-22, 124 vessels, register tonnage 6,362 entered and cleared the port.

Tignish Harbour, P.E.I.—NW. coast—is at the mouth of the Kildare river, $4\frac{1}{2}$ miles northward of cape Kildare. Two breakwaters protect the harbour one on the north side 1,500 feet long and one on the south side 1,700 feet long. The channel between them has a width of 40 yards. Beach protection works connect the inner side of the breakwaters. Depth of water between breakwaters is 6 feet at low tide.

Leading Lights.—On beach at inner end of N. breakwater pier a white, square, wood tower, black band, shows from a height of 35 feet above high water, a white fixed light. On outer end of N. breakwater pier 620 feet, 106° true from main light, a mast, with white shed at base shows from a height of 18 feet above high water, a red fixed light. The lights in line lead in between the breakwaters.

Storm Signals are shown at Tignish.

Communication.—Postal and Telegraph. Tignish is a station on the Charlottetown-Tignish branch of the P.E.I. division, Canadian National Railways.

The Village of Tignish is about 1 mile inland from the river entrance, it has 2 churches, the chief industry is fishing, and to a certain extent agriculture.

Shipping.—During the fiscal year 1921-22, 9 vessels, register tonnage 151 entered and cleared the port.

Tracadie Harbour, P.E.I.—north coast—is about 4 miles eastward of Cape Stanhope. Its entrance is at the western end of a range of sandhills from 50 to 60 feet high. A shifting bar of sand extends $\frac{3}{4}$ of a mile from the entrance with 5 feet at low water in a channel 80 yards wide.

Within the sand bar the harbour is 3 miles wide, carries $2\frac{1}{2}$ fathoms of water, and runs in 4 miles to the southward. It is only suitable for small vessels and the bar can only be negotiated in favourable weather. The channel and harbour are buoyed.

Breakwater.—A breakwater has been built 1,000 feet long from the east side of the entrance.

Leading Lights.—A light, red fixed, from a white square open framework tower, 19 feet above high water, is shown on beach west side of entrance.

A red fixed light, 345 feet, 183° true from front light, is shown at a height of 24 feet above high water, from a white, square, wood tower.

On point at shore end of breakwater, south of point on east side of entrance to harbour, a mast, 17 feet high, shows a white fixed light.

From a mast 27 feet high, a white fixed light is shown, 162 feet, $186^{\circ} 30'$ true from front light.

The towers and masts are moved as the channel shifts.

Directions.—Vessels entering the harbour should keep the line of the mast lights up to point of intersection, with line of tower lights, when the latter should be followed.

Tides.—Springs rise $3\frac{1}{2}$ feet, neaps $2\frac{1}{2}$ feet.

Port Charges.—Harbour master's and usual port charges.

Communication.—Postal and telegraph and a station on P.E.I. division of Canadian National Railways.

Wood Island Harbour, P.E.I.—south coast—3 miles west of Little Sands—is a harbour for light draught vessels and coasting schooners. It is formed by 2 small islands connected by a sand bar, 7 cables long and about $\frac{1}{2}$ mile off the shore and parallel to it. The entrance is from eastward but it is nearly dry at low water. Sand for concrete is shipped from the harbour, and there is an extensive cod fishery.

Breakwaters.—There are two breakwaters, the southern one 1,090 feet long, and the northern one 2,500 feet.

Anchorage.—There is good anchorage in NW. winds off the coast within 1 mile eastward of Wood island in 3 to 9 fathoms, Indian rocks breaking the sea.

Tides.—Springs rise 6 feet, neaps 4 feet.

Lights—Buoys.—For a description of lights, buoys, and beacons in harbour and approaches, and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 244 to 246 inclusive, covering chart No. 2034; also Department's 1923 "List of Lights and Fog Signals."

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 245, covering chart No. 2034.

Supplies.—No ships' supplies obtainable.

Communication.—Postal and telegraph, and station on P.E.I. division of Canadian National Railways.

NEW BRUNSWICK.

Alma Harbour, N.B.—is at the mouth of Upper Salmon river, Chignecto bay. There is an outer and an inner harbour, the former being known as Herring cove, where vessels load lumber, and there is good anchorage over mud. The harbour is open all the year.

Wharves.—In the inner harbour is a continuous shore wharf 400 feet by 50 feet, and above the bridge is a wharf 100 feet by 70 feet; depth of water at the wharves about 16 feet.

Light.—At the outer end of Alma wharf a white mast with white shed at base shows a fixed red light, 26 feet above high water.

Tides.—Rise springs 37 feet, neaps 30 feet.

Pilotage is compulsory. When approaching Herring cove pilot will come off to anchor vessels in berth, and care should be taken as the water shoals rapidly at the head of the cove.

Port Charges.—Harbour master's fees and customs charges.

Supplies.—Provisions can be had at Herring cove.

Fresh water is obtained from a tug at three days' notice.

Repairs.—There are no facilities for repairs.

Bathurst Harbour, N.B.—south shore Chaleur bay and mouth of Nipisiguit river, is 2 cables wide between its entrance points, Caron point on the east and Alston point on the west.

A bar extends $1\frac{1}{2}$ miles seaward from the entrance of the harbour to the 3 fathom line, a channel 200 feet wide with least depth of 13 feet at low water has been dredged through the bar. It is marked by 4 red spar buoys on starboard side, and 4 black spar buoys on port side, entering the harbour—and one ballast ground buoy 3 miles from entrance.

Within the entrance is an extensive basin 3 miles long and 2 miles wide, but nearly dry at low water.

Anchorage.—Vessels usually moor to load timber, just outside the entrance between the sandy points in 3 to 4 fathoms, sheltered by the bar and sandy shoals on either side.

Leading Lights.—On Carron point, a white, square, wood tower shows from a height of 22 feet above high water, a red fixed light.

On a pier on shoal 1,500 feet, 208° true from front light, a white pole, with shed at base, shows from a height of 38 feet above high water, a white occulting light.

The lights in line lead through the centre of the dredged channel over the bar.

Directions.—Local knowledge is necessary to enter Bathurst harbour, and the bar should not be attempted without a pilot.

Pilotage is compulsory. The rates are according to those of the Bathurst Pilotage authority.

Inwards:

From sea to inside harbour	\$1.50	per ft. draught of water
From ballast ground to inside harbour .. ..	.75	" " " " "
From sea to ballast ground	1.20	" " " " "

Outwards:

From inside harbour to sea	1.50	" " " " "
From inside harbour to loading berth outside ..	.75	" " " " "
From loading berth outside to sea .. .. .	.80	" " " " "

In addition to the above rates any vessel propelled wholly or in part by steam shall pay 2 cents per net registered ton inwards, and two cents per net registered ton outwards.

Tides.—Springs rise 7 feet, neaps 4 feet.

Port Charges are harbour master's and sick mariners' dues.

Storm Signals are exhibited at Bathurst.

Hospital.—There is a seamen's hospital

Wharves.—There is 16 feet of water at all the Bathurst wharves at low tide. Gloucester Lumber Co. wharf is 600 feet long; the public wharf 250 feet, and there are several other wharves owned by the Bathurst and Nipisiguit Lumber Co's. There is a railway spur from the Carquet Railway to the wharves of the latter company.

Communication.—Postal and telegraph—and is a station on the Moncton and Rivière du Loup and Carquet division of the Canadian National Railways.

The Town of Bathurst is built on the point dividing the Nipisiguit from North and Middle rivers, and is the shire town of Gloucester Co., population in 1921: 3,327. It had in 1920, 29 industrial establishments employing 896 hands; value of products, \$4,980,990.

Trade.—Is a deal port and carries on an extensive salmon fishery. Value of exports for fiscal year 1921-22, \$156,957; of imports, \$283,862.

Shipping.—During the fiscal year 1921-22, 75 vessels, register tonnage 10,600, entered the port; 73 vessels, register tonnage 10,568, cleared.

Beaver Harbour, N.B.—south coast, north shore of bay of Fundy, lies 2½ miles eastward of Deadman head, NE. entrance point of Passamaquoddy bay, from its entrance ¾ of a mile wide, the harbour runs 1½ miles northward where it divides into two arms dry at low water.

Anchorage.—Drew point is 4 cables NE. of west entrance point; half a mile north of this point and abreast the village, on the west side is good anchorage for small vessels in 2½ fathoms. There is anchorage in 8 fathoms on east side of harbour fairway. Harbour is open all year.

Light.—On Drew point, a white, square, wood tower shows from a height of 45 feet above high water, a white occulting light. Hand fog horn attached.

Buoys.—A black and white striped iron whistle buoy is moored in 22 fathoms, 1½ miles southward of the lighthouse, off the harbour entrance.

A red iron can buoy is moored midway between the lighthouse and a rocky patch with $2\frac{1}{4}$ fathoms, 4 cables east of it.

Port Charges.—Harbour master, and usual port charges.

Supplies.—Ships' supplies obtainable.

The Village of Beaver Harbour.—Has a wharf, 2 fish factories, and 5 stores, and post and telegraph offices. Nearest railway station is Pennington, $4\frac{1}{2}$ miles away—a steamer of the Maritime S.S. Co. between St. John, N.B., and St. Andrews, N.B. calls twice a week.

Buctouche Harbour, N.B.—east coast—is at the mouth of the Buctouche river—About $3\frac{1}{2}$ miles northward of Indian point the north entrance point of Buctouche river, a sand spit runs from the coast S.E. for 6 miles; there is a lighthouse at its southern end.

Outside of this spit an outer bar starting off Paquet point to the southward runs northward for 7 miles parallel to the shore ending in North Patch with 12 feet water over it at its extreme north end—between this bar and the land is a narrow channel with depths of $3\frac{1}{2}$ to 5 fathoms.

The harbour inside the sand spit off the mouth of Buctouche river is about 6 cables across between the 3 fathom lines, and affords safe anchorage clay bottom, there is 22 feet at low water, S.W. of south end of Sand spit is an inner bar at the mouth of the river with a depth of 7 feet at low water ordinary springs, within the bar is a wide channel, with $2\frac{1}{2}$ to 3 fathoms mud, where vessels ride safely. The river is navigable for vessels for 10 miles above the bar, and for boats for 19 miles above it. The channel into the river is buoyed.

Tides.—Springs rise 4 feet, neaps $2\frac{1}{2}$ feet.

Lights—Buoys—Beacons.—For description of lights, buoys, and beacons in harbour and approaches, see 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 236 and 237, covering charts Nos. 2034 and 1986.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 237, covering charts Nos. 2034 and 1986.

Port Charges.—As at other Canadian ports.

Bridge.—A road bridge crosses the river about 2 miles inside the entrance; a part of the bridge is movable to allow vessels to pass.

Wharf.—A wharf 300 feet long with depth of 17 feet along its face, runs parallel to the bank of the river immediately below the road bridge, the back of the wharf has a railway branch close to.

Village of Buctouche is about 4 miles within the river entrance—has postal and telegraph communication, and is a station on Moncton to Buctouche branch of N.B. division of Canadian National System. There is a church, post office, and saw mills and grist mills at head of tide, and a considerable trade is carried on in fish and lumber, the settlers are chiefly Acadians.

Shipping.—During the fiscal year 1921-22, 25 vessels, register tonnage 729 entered and cleared the port.

Campbellton Harbour, N.B.—is at the head of navigation on the Restigouche river, famous for its picturesque scenery. Vessels of moderate

draught ascend at high water to Campbellton off which they moor in 3 to 3 $\frac{1}{3}$ fathoms at low water.

Light-Buoys—Buoys.—The channel between Dalhousie and Campbellton is marked by light-buoys, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 324, covering chart No. 3636, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Leading Lights.—See 1916 Admiralty "St. Lawrence Pilot" Vol. 2, pages 324 and 325, covering chart No. 3636, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Wharves.—The Government or Railway wharf has a T head, the eastern and longer arm of which is 280 yards long and 35 feet broad, with berths of from 14 to 22 feet depth on the north and south sides, the western arm is somewhat shorter. At this wharf is berthing accommodation for 3 ocean-going steamers on the outside, and 2 on the inside. There is a large freight shed on the wharf. Lumber and cargo is taken by rail to ships side and loaded from cars.

There are 2 other wharves; Shives Lumber Co. wharf with about 10 feet water alongside, where schooners discharge when the Government wharf is occupied, and another about 400 feet long used by small vessels aground.

Tides.—Springs rise 10 feet, neaps 7 feet.

Port Charges.—Are harbour master's fees, wharfage fees and sick mariners' dues.

Pilotage.—Is under Restigouche Pilotage Authority and payment is compulsory. Rates for sailing vessels direct from sea, \$2 per foot draught; vessels calling at any port in the district on the way to Campbellton, \$1.50 per foot draught and a further charge of 75 cents from any of these places to Campbellton. All vessels propelled by steam charged in addition to above rates 1 cent per registered ton.

Supplies.—Ships' supplies are obtainable. The principal purveyor being W. H. Marquis & Co., ship chandlers.

Ferry.—A ferry runs every half hour between Campbellton and Cross point on the north shore opposite, where there is a small ferry wharf.

Communication.—Is a station on Moncton and Rivière du Loup branch of New Brunswick division of Canadian National Railways, and on Intercolonial division of the same system.

Town of Campbellton—Restigouche Co., is an incorporated town, and an important deal shipping port; had in 1921 a population of 5,570, and in 1920, 27 industrial establishments, employing 840 hands, total value of products \$3,373,311.

Trade.—The chief export is lumber, principally deals.

Value of exports for fiscal year 1921-22, \$981,616; of imports \$84,665.

Shipping.—During the fiscal year 1921-22, 71 vessels, register tonnage 24,019, entered the port; 73 vessels, register tonnage 26,210, cleared.

Campobello or Welchpool Harbour, N.B.—is on the west coast of Campobello island and NE. end of Friar bay. Between Friar head the SW. point of Friar bay and Welchpool a distance of about 1 mile, there is good anchorage in 10 fathoms, $\frac{1}{2}$ cable from Queens wharf at Welchpool, there is a depth of 5 fathoms.

Welchpool Village.—Has a post office, and a wharf called the Queens wharf alongside which vessels of moderate draught can lie—the nearest railway station is at St. Andrews, N.B.—Grand Manan Steamboat Co. between St. John, N.B., and Grand Manan, calls weekly.

Motor launches from St. Andrews call irregularly.

Shipping.—During the fiscal year 1921-22, 704 vessels register tonnage 58,599, entered the port; 372 vessels, register tonnage 53,329, cleared.

Cape Tormentine, N.B.—east coast is the extreme east point of the headland projecting into Northumberland strait north of Baie Verte.

The harbour is formed by the railway ferry pier of the N.B. and P.E.I. railway about 3,000 feet long, and a rubble breakwater 585 feet long.

The outer basin of about 14 acres is used by the ferry in docking and has a depth of 23 feet at ordinary low water springs.

From the main pier a 300 foot projection runs shoreward enclosing an inner basin of about 4 acres, with depths of 13 to 18 feet at low water. This basin is served by a railway siding.

Leading Lights.—A light is shown from a mast on the west side of the freight shed on railway pier, another light 216 feet above high water is shown from a white, square tower, 243° true, 870 yards from preceding light. The lights in line lead to pier head, clear of southern end of Jouramain shoals, about $1\frac{3}{4}$ miles NE. of cape Tormentine.

Cape Tormentine Entrance—Front: 3,315 feet $166^{\circ}45'$ from cape Tormentine pier back range light, a white, square, wood tower shows from a height of 41 feet above high water a white fixed light.

Back: 993 feet $209^{\circ} 30'$ from front, a white, square, wood tower shows 59 feet above high water a white fixed light.

Light.—On the east end of the southern Jouramain island lying off northern part of Cape Tormentine headland a white octagonal wood tower shows from a height of 72 feet above high water a white occulting light.

Bell Buoy.—A black bell buoy marks Tormentine reefs, 3 miles east of Indian point, southern point of cape Tormentine.

Buoy.—A gas and bell buoy marks S.E. point of Jouramain shoals, $1\frac{3}{4}$ miles NE. of cape Tormentine.

Tides.—Springs rise 9 feet, neaps 5 feet.

Tidal Streams.—In vicinity of Tormentine reefs, the flood stream setting southward has a rate of 3 knots.

Fog Horn.—To assist ferry in docking in thick weather, the power house on the pier is equipped with a siren fog horn, a bell is also placed on end of pier.

Ice-Tools used for winter mail service between cape Tormentine and cape Traverse, P.E.I. opposite are stored in wooden building, 40 feet high, surmounted by a lantern, close northward of the inner end of the pier.

Life Boat.—There is a life boat station at cape Tormentine.

Telegraph Cable.—Crosses strait from cape Tormentine to cape Traverse.

Communication.—Postal and telegraph, and terminus of N.B. and P.E.I. railway—a car ferry the “Prince Edward Island” operates between cape Tormentine and Port Borden, P.E.I.

The Village of Cape Tormentine has 2 small general stores, an hotel, church, post and telegraph and Dominion Express offices, and a number of lobster factories,—farming and fishing are the chief industries.

Caraquet Harbour, N.B.—is on south side of Chaleur bay, immediately west of Pokesudie island. The entrance is between Caraquet island and shoal on the north, and the mainland on the south. From the entrance the harbour extends about 11 miles westward along the N.B. mainland.

In the eastern part of the harbour immediately within Pokesudie island, there is a depth of 5 to 6 fathoms and $3\frac{1}{2}$ fathoms is carried to within half a mile of SE. point of Caraquet island.

The channel between the island and the main is $1\frac{1}{2}$ cables wide dredged to a depth of 18 feet at low water in a cut 3,850 feet long, and 150 to 200 feet wide.

Further westward the channel is a quarter of a mile wide with $4\frac{1}{2}$ fathoms depth and sheltered by Mizinette sands running SE. from Mizinette point on the north shore.

It is an excellent harbour for moderate draught vessels and even for larger ones, but care is necessary in navigation as the approach is between shoals extending several miles from shore, and the channel narrow.

Ice.—Caraquet harbour usually freezes over about 11th December, and is clear of ice by the 8th of May.

Tides.—Springs rise 6 feet, neaps 4 feet.

Lights—Buoys.—For description of lights and buoys in harbour and approaches and further information, see 1916 Admiralty “St. Lawrence Pilot” Vol. 2, pages 301 to 305 inclusive, covering chart No. 1715, also Department’s 1923 “List of Lights and Fog Signals on Atlantic Coast.”

Directions.—See 1916 Admiralty “St. Lawrence Pilot” Vol. 2, pages 303 and 304, covering chart No. 1715.

Port Charges.—Harbour master’s and sick mariners’ dues, as regulated by Canada Shipping Act, Chapter 113.

Pilotage.—Under Caraquet Pilotage Authority, the rates are for vessels of not more than 60 tons register tonnage when employing pilots \$6. Over 60 tons and not over 80 tons \$9. For all vessels over 80 tons inward \$1.20 per foot draught and outward \$1 per foot draught of water.

Storm Signals.—Are shown at Caraquet.

Wharves.—Four cables eastward of Brideau point, a wharf 1,000 feet long has depth of 9 feet at low water at its outer end.

The government wharf at Lower Caraquet south shore of harbour, 1,700 feet long, has a depth of 22 feet at low water springs at its outer part for a length of 300 feet. At Upper Caraquet on south shore further west is a landing and shipping wharf.

A wharf with 2 feet depth at outer end at low water, is at Mizinette on north side of harbour.

Communication.—Postal and telegraph, is a station on Caraquet branch of New Brunswick division of Canadian National Railways.

Village of Caraquet is a thriving fishing settlement, timber, flour, and oysters are shipped from Caraquet. Population about 4,000.

Shipping.—During the fiscal year 1921-22, 138 vessels register tonnage 3,375 entered the port, 156 vessels, register tonnage 3,785 cleared.

Chatham Harbour, N.B.—extends from Chatham to the mouth of Miramichi river, a distance of 30 miles. The inner bar at the entrance has about $2\frac{3}{4}$ fathoms of water over it at low tide. When this is crossed depth of water in the channel varies from 4 to 8 fathoms, with good anchorage all the way from the mouth of the river.

Wharves.—At Loggieville, $22\frac{1}{2}$ miles from the mouth of the river is a wharf with railway branch with large sheds and storehouses from which lumber and fish are shipped, with a depth of water of 16 feet. On the north side $5\frac{1}{2}$ miles further up is a wharf and pulp mill, depth of water 60 feet. About $\frac{1}{2}$ mile further up at the eastern end of Chatham port, is Canada wharf, with a railroad branch, depth of water 17 feet. Snowball's wharf at Chatham has 30 feet of water, alongside adjoining is the Miramichi Lumber Company's wharf and shed, depth of water 20 feet, used by steamers for loading pulp. Next is the town wharf with 18 feet of water used chiefly as a coal wharf; adjoining is the ferry wharf and Loggie's wharf with large warehouses; depth of water at Loggie's wharf 16 feet. Dominion Government wharf is used for storing buoys in the winter. Snowball's wharf, 18 feet of water, has two large warehouses and a coal shed. Other wharves are: Johnson's wharf with coal shed and warehouses and 12 feet of water; Steam Navigation Company's wharf, two warehouses and a coal shed and 16 feet of water, used by passenger boats, Welsh's wharf and boom, Russel and Foundry wharves 16 feet of water, Watt's ballast wharf, Snowball's deal wharf, and at Clark's cove at the west end of the town, a wharf used for shipping pulp, with depth of water of 20 feet. There are 16 berths in the port where ocean-going vessels load lumber.

Port Charges.—Harbour master's dues are from 50c up to \$7 for ships of 1,000 tons or over. Sick mariners' dues are 2c per ton.

Pilotage Dues.—(a) For steamers a flat rate of \$25.00 inwards and \$25.00 outwards and five cents per registered ton inwards and five cents per registered ton outwards. (b) For sailing vessels up to 300 tons register a flat rate of \$25.00 per vessel inwards and \$25.00 per vessel outwards and six cents per registered ton inwards and six cents per registered ton outwards. (c) For sailing vessels over 300 tons register and not exceeding 700 tons register a flat rate of \$25.00 per vessel inwards and \$25.00 per vessel outwards and five cents per

registered ton inwards and five cents per registered ton outwards. (*d*) For sailing vessels over 700 tons register a flat rate of \$25.00 per vessel inwards and \$25.00 per vessel outwards and four and one-half cents per registered ton inwards and four and one-half cents per registered ton outwards.

Removal in harbour within a mile \$4; barges in tow of a tug pay inward pilotage only.

Pilotage is under the control of the Miramichi pilotage authority and is compulsory.

Lights.—On Escuminac point fixed white light with diaphone fog alarm 240 feet from the lighthouse. On Preston beach 2 fixed white lights, the rear light 804 feet from the front one. On east and west sides of Horseshoe bar are occulting gas buoys, and another on the bar, taking the place occupied in 1914 by the Miramichi Bay Lightship. Two fixed white lights at Grandoons, one on the mainland and one on the island, which are ranges for the Grandoon channel. Two white fixed range lights at Oak point N. side of river. One range light on NE. edge of Sheldrake island, and one on N. side of island, both white fixed. Two lights on Grant beach N. side of river, white fixed, and one fixed white light on Middle island.

Directions.—See pages 278, 279, and 283 and 284, "1916 Admiralty St. Lawrence Pilot," covering chart No. 2034.

Tides.—At Chatham springs rise 6 feet, neaps 4 feet.

Storm Signals are hoisted at Chatham on warning being received from the Meteorological office at Toronto.

Quarantine.—Chatham is a minor quarantine station and contains a seamen's hospital.

Tugs may be obtained from Chatham by signal to Escuminac lighthouse station; there is no regular charge.

Communication.—Chatham is connected by the Canada Eastern railway with Fredericton; this railway has junctions with the Intercolonial railway about 6 miles above Chatham, and with the Canadian Pacific railway at Fredericton. Steam vessels of the Miramichi Steam Navigation Company call here.

Supplies.—Potatoes are plentiful and other vegetables, and meat and bread obtainable; the best water is taken from springs but the surface water of the river is quite fresh on the ebb tide.

Coal.—Coal in any quantity is at present not obtainable.

Repairs.—There is neither dock nor slip in Miramichi river, but at Chatham is a wharf for heaving down vessels for repairs, and there are shipyards and foundries.

Navigation season.—Navigation closes on an average at Chatham on December 5, and opens on the 20th of April; the river is closed between these dates.

Town of Chatham, Northumberland Co., is the chief town on the Miramichi river, and extends in a somewhat straggling fashion along the right bank of the river for about $1\frac{1}{4}$ miles.

Contains some handsome buildings, a college and a hospital. Is one of the principal deal ports of New Brunswick. Population in 1921 was 4,506.

Trade.—The chief exports from Chatham are timber, deals, paling, salmon, lobster and extract of hemlock bark for tanning. For the fiscal year 1921-22, value of exports \$314,345; of imports, \$280,306.

Shipping.—During the fiscal year 1921-22, 135 vessels, register tonnage 24,690, entered the port; 139 vessels, register tonnage 24,789, cleared.

Lloyd's Agent.—R. Murray, K.C., Water street, Chatham, N.B.

Cocagne Harbour, N.B.—east coast; the entrance to this harbour between Renouard point and Cocagne island, about $\frac{3}{4}$ of a mile apart, is about $3\frac{1}{2}$ miles north of Shediak point, the north point of Shediak bay.

The harbour is small and the channel over the bar with 10 feet at low water springs, crooked, within the bar is a depth of $2\frac{1}{2}$ to 4 fathoms in a narrow channel for about $\frac{3}{4}$ of a mile, where vessels moor. Further in the bay is shallow with mud flats and oyster beds.

Cocagne river enters the head of the bay 3 miles SW. from the entrance, is crossed by a bridge at its entrance and navigable by boats for several miles.

Cocagne settlement.—The shores of the harbour and river are well settled by people of Acadian and British extraction chiefly engaged in farming—has a post office and church.

Leading Lights.—On south entrance point of Cocagne river a white, square, wood tower shows from a height of 26 feet above high water, a red fixed light.

On shore of Cocagne river, 865 feet, $219^{\circ} 30'$ true, from the front light, a mast, diamond day mark attached, shows from a height of 47 feet above high water, a red fixed light.

Dalhousie Harbour, N.B.—is at the head of Chaleur bay on Dalhousie island (locally Douglas island) which is two cables long, high, rocky, and wooded, and joined by a breakwater 1,000 feet long (built in 1911-12) to the low point of Dalhousie, at a cable south westward. On that point are large storehouses and wharves, and Dalhousie town is on the side of a hill south-westward of the island.

The harbour may be approached either through the direct channel $1\frac{1}{2}$ cables wide between Middle ground and Dalhousie island, or round north and west of Middle ground and over 3 fathoms at low water. The narrow channel has good leading marks and carries 6 fathoms of water.

Anchorage.—The best anchorage in Dalhousie harbour is in $6\frac{1}{2}$ or 7 fathoms with Dalhousie island and Bon Ami point in line.

Lights.—A flashing white on north point Douglas or Dalhousie island (latitude $48^{\circ} 40'$ N.) (longitude $66^{\circ} 22'$ W.) 63 feet above high water. On south side of Dalhousie railway wharf 300 feet from its western end, a white group occulting light with two red sectors 35 feet high.

Tides.—The springs rise 9 feet, neaps 6 feet. The rate of the tidal streams in the entrance does not exceed 2 knots.

Navigation Season.—Usually from December 5 to April 15. First vessel arrives from sea about May 14, and leaves about 11 of November.

Port Charges.—Are Harbour Masters' and Sick Mariners' dues. Freight handled in the port is principally lumber, loaded by hand and ships' tackle at a cost of \$1.50 per standard for stevedoring.

Pilotage is under control of the Restigouche Pilotage authority and payment is compulsory. The rates are \$1.50 per foot draught for sailing vessels with additional charge of one cent per register ton for steamers. Pilots can be obtained at Dalhousie for Restigouche river.

Directions.—See 1916 "Admiralty St. Lawrence Pilot" Vol. 2, pages 321 and 322, covering charts Nos. 3636 and 1715.

Wharves.—The Government wharf close west of Montgomery island has a frontage of 600 feet, with a depth alongside of 18 feet at low water springs, and 300 feet on its south side with a depth of 20 feet at low water. Railway sidings run on the wharf and vessels can load from cars. Intercolonial railway wharf adjoins, 350 feet long on east side with 17 feet of water. Moffat wharf with a depth of 20 feet at its outer end, is between Dalhousie and Montgomery islands.

The ferry wharf and basin for smaller craft lie between the breakwater and Moffat wharf with a depth of 15 feet dredged for 400 feet along the ferry wharf, and 650 feet along the breakwater, the average width of basin being 180 feet and the entrance over the rock ledge carrying 18 feet at low water springs and having a width of 90 feet.

Storm Signals are exhibited at Dalhousie.

Supplies.—Fresh provisions can be obtained at Dalhousie.

Dalhousie Town is shire town of Restigouche county; population in 1921 was 1,958. Trades in lumber, preserved salmon, and lobsters. The Intercolonial railway has a station at Dalhousie, and there is a telegraph office.

Shipping.—During the fiscal year 1921-22, 33 vessels register tonnage 9,522 entered the port; 32 vessels register tonnage 9,474 cleared.

Dorchester Harbour, N.B.—is on the east side of the Memramcook river flowing into Chignecto bay, between Fort Folly point and Coles head and about $2\frac{1}{2}$ miles inside the latter. Dorchester island lies about 1 mile to eastward of Dorchester, at which are two wharves, one with depth of 27 feet alongside at high tide, the other with a depth of 20 feet.

Communication.—Postal and telegraph, and is a station on the Halifax and Moncton branch of N.S. division of Canadian National Railways.

Shipping.—During the fiscal year 1921-22, 4 vessels register tonnage 641 entered the port; 5 vessels register tonnage 789 cleared.

Grand Harbour, N.B.—On the SE. coast of Grand Manan island, included in Charlotte Co., N.B.—is well sheltered on the east by Ross island, has a depth of $2\frac{1}{2}$ fathoms in the entrance, but the sheltered space northward of Fish Fluke point, the west extreme of Ross island, is dry at low water and only adapted for small vessels that can lie aground. For vessels of 10 feet draught, there is a good beaching place on the west side of the harbour.

Light.—On fish Fluke point, a white, square, wood tower, with dwelling attached, shows from a height of 40 feet above high water, a white occulting light; hand fog horn attached.

Pilotage is non-compulsory.

Supplies.—Provisions and water are obtainable.

Communication.—Postal and telegraph and steamboat service to St. John, N.B.

Lloyd's Agent for Grand Manan: S. D. Gupstill.



Harvey, N.B.—Is on the south side of the Shepody river, which flows into the Petitcodiac river at its junction with Chignecto bay; Harvey is 3 miles inside the mouth of the Shepody. The mouth of the Shepody is filled with flats, dry at low water.

Wharf.—There is a government wharf which has about 20 feet of water alongside at high tide; and from which lumber is shipped.

Port Charges are similar to those of other bay of Fundy ports.

Supplies.—With the exception of provisions, ships' supplies to any extent are not obtainable.

Communication.—There is a post office at Harvey, and Albert a port further up the Shepody river, is a station on the Canadian National Railway system.

Head Harbour, N.B.—the most northerly harbour on Campobello island, lies between the mainland of Campobello island and Head Harbour island to the southward. The entrance points from the NE. being East Quoddy head on the north and the north point of Head Harbour island on the south; from between these points the harbour extends two-thirds of a mile SW., whence it continues in the same direction in the form of a narrow inlet about 8 cables long to a mill dam at the inlet head.

The harbour forms a well sheltered anchorage in 4 to 6 fathoms, for small vessels. The north side of the channel between East Quoddy head and Head Harbour island is the deeper.

Light.—On East Quoddy head, outer end, a white, with red cross, octagonal wood tower, with dwelling attached, shows from a height of 64 feet above high water, a white fixed light.

A diaphone fog alarm is operated in connection with light.

Hillsborough Harbour, N.B.—is $4\frac{1}{2}$ miles NW. of cape Hopewell, near the mouth of Petitcodiac river (on east bank) which flows into Chignecto bay, bay of Fundy.

The anchorage ground is 3 miles below the harbour in 3 to 6 fathoms at low water.

The tide rises very rapidly in the river and the harbour is dry at low water, with the exception of a shallow stream in mid channel.

Tides.—Rise 45 feet springs, 38 feet neaps.

Lights.—On outer end of Government wharf at Cape Hopewell, a white, square, wood tower shows from a height of 20 feet above high water, a white fixed light.

On south extreme of Fort Folly point, opposite cape Hopewell, a white square, wood tower, with red horizontal band, dwelling attached, shows from a height of 77 feet above high water, a white fixed light. Hand fog horn attached.

Buoy.—A black barrel buoy is moored 1 cable to eastward of Calhoun flats at entrance to Petitcodiac river.

Wharves.—There are six wharves in the harbour, three owned by the Albert Mfg. Co., and used by the company for shipping gypsum, each wharf accommodating one vessel at a time. The company have their own railway from the quarries and mill to the wharves. The depth of water is 24 feet at high spring tides, and 17 feet at neap tides.

One wharf at Grays island, is owned by the Hillsboro Plaster Quarrying and Mfg. Co., and used by them for shipping gypsum. There is a railway siding owned by the Canadian National Railways to this wharf upon which gypsum is carried; the depth of water at this wharf is 26 feet at high spring tides, and 19 feet at neap tides.

The Hillsboro Plaster Quarrying and Mfg. Co. also own a wharf situated about one mile below the Albert Mfg. Co. wharves, they have a railway from their quarries to the wharf. The depth of water is 34 feet at high spring tides and 27 feet at neap tides.

The Dominion Government wharf is a short distance below the last mentioned wharf; it is in good condition, but is not used much for shipping; the depth of water is about 33 feet at high spring tides, and 26 feet at neap tides.

Port Charges.—Are harbour master's dues paid twice a year, and sick mariners' dues paid three times a year, if not paid elsewhere, and shipping masters' fees.

Pilotage.—There are 2 licensed pilots.

Repairs.—There is no dry dock, but vessels can go on a good gravel beach, and do minor necessary repair work. Ships' carpenters and caulkers can be hired.

Supplies.—With exception of sails, rigging, hawsers, anchors, chains, all other ships' supplies can be obtained.

Communication.—Postal and telegraph—is a station on the Albert branch of New Brunswick division of the Canadian National Railways.

The Town of Hillsborough, Albert Co., is on the west bank of the Petitediac river, about $4\frac{1}{2}$ miles inside cape Hopewell—has a population of about 1,300, an hotel, plaster and flour mills; gypsum mining on an extensive scale is carried on, and some coal mining.

Shipping.—During the fiscal year 1921-22, 60 vessels, register tonnage 26,562, entered and cleared the port.

Lord's Cove Harbour, N.B.—is on east side of Deer island, about $1\frac{1}{2}$ miles southward of the NE. end, and is formed by the main of Deer island on the NW. and Bean island to the SE. Its NE. entrance lies between these islands, and is about 2 cables wide; inside the harbour is good anchorage in from 9 to 21 fathoms mud.

Lords Cove Village is built on the shores of the cove at the north end of the harbour, and is a very considerable fishing settlement. It has a post office, the nearest railway station is at St. Andrews, N.B. Maritime SS. Co., between St. John and St. Andrews, calls weekly. Motor launches from St. Andrews call irregularly.

Shipping.—During the fiscal year 1921-22, 506 vessels, register tonnage 8,997, entered and cleared the port.

Miscou Harbour, N.B.—sometimes called Little Shippigan harbour is on the south side of Chaleur bay between Miscou island on the NE. and Shippigan island on the SW. The entrance past the sandy spit at SW. end of Miscou island is 2 cables wide and 4 to 6 fathoms deep. Inside Miscou island the harbour extends in a SE. direction for about 2 miles, and in a NE. one for about the same distance to within 1 mile of Miscou gully, with mud bottom.

Miscou channel leading to the harbour lies between Miscou flat on the NE. and Shippigan flat on the SW. and at one part is only $1\frac{3}{4}$ cables wide between shoals so steep that no warning of them is given by the lead.

Lights.—On west coast of Miscou island at Goose lake, a white, square, wood tower shows from a height of 40 feet above high water, a white occulting light.

Range Lights—Front.—On sand spit off Pecton point, a white, square, wood tower, on square cribwork pier, shows 22 feet above high water a white fixed light.

Back—2,340 feet $120^{\circ} 45'$ from front, a pole small white shed at base, shows 45 feet above high water a white fixed light.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 298 and 299, covering chart No. 1715.

Signal Station.—There is a signal station at Goose lake lighthouse connected with Shippigan by telephone.

Wharf.—There is a government wharf or pier about 1,800 feet long with depth at end of 6 feet at low water inside SW. point of Miscou island which is the general landing place for the island.

Port Charges.—A harbour master and usual port charges under Canadian Shipping Act regulations.

Supplies.—Ordinary ships' supplies obtainable for fishing vessels.

Communication.—Postal and telegraph—nearest railway station Shippigan.

Moncton Harbour, N.B.—is at a bend of the Petitcodiac river, about 6 miles NW. of McFarlane point. The Petitcodiac river enters Chignecto bay at Folly point.

The Petitcodiac is navigable at or near highwater for vessels of moderate draught for 25 miles to Moncton. At Folly point the Petitcodiac is about $\frac{3}{4}$ of a mile wide, and from thence it trends in a general northerly direction for about 22 miles to Moncton.

In the channel the depth is $1\frac{1}{4}$ to 2 fathoms at low water. Vessels lie on a mattress crib at Moncton.

Bore.—A bore, with a breaking face, occurs in Petitcodiac river at about 3 hours before high water. Commencing at Stony creek it runs to Salisbury, a distance of about 21 miles. At Moncton, 8 miles northward of Stony creek, the rate of progress is about $8\frac{1}{2}$ miles an hour, its average height being $3\frac{1}{4}$ feet. After its passage the tide rises very rapidly until high water. During neaps the bore still appears, but its broken part is usually only a few inches high.

Lights.—On Outhouse point, opposite Moncton, a white, square, wood tower shows from a height of 27 feet above high water a red fixed light.

On Folly point—a white square wood tower, with a red horizontal band, dwelling attached, shows from a height of 77 feet above high water a white fixed light.

Port Charges.—Harbour master and usual port charges.

Wharves.—There are 4 wharves. The government wharf has 225 feet front, depth of water 25 feet springs, 18 feet neap tides.

Summer's wharf, 250 feet frontage with 23 feet water at spring tide.

Tenant's wharf, 280 feet front, adjoins on to Summer's, making a total frontage of 530 feet.

Reed Company's wharf, 85 feet frontage, 20 feet of water at spring tide.

There are warehouses on all private wharves; a railway track runs along the wharves and there are sidings to all wharves.

Communication.—Is a terminal of Halifax and Moncton line of Canadian National Railways, and of the St. John branch, Moncton and Riviere du Loup line, Transcontinental line, and Buctouche branch of the same system.

Town of Moncton.—Westmoreland Co., is the principal town of the isthmus. Has 11 churches, schools, hotels, cotton mills, and factories. Rolling stock



The Bore, Moncton, N.B.

is manufactured in the Canadian National Railway machine shops. Fodder is exported in large quantities to Great Britain.

In 1920 Moncton had 90 industrial establishments, employing 3,061 hands, value of products \$8,888,553.

In 1921 population was 17,488.

Trade.—For the fiscal year 1921-22, value of imports \$1,402,143; of exports \$203,932.

Shipping.—In the fiscal year 1921-22, 121 vessels register tonnage 7,676 entered the port; 119 vessels, register tonnage 7,659 cleared.

Musquash Harbour, N.B.—on north shore of bay of Fundy, about $10\frac{1}{2}$ miles eastward of point Lepreau. The harbour is about $\frac{3}{4}$ of a mile wide at the entrance and about 2 miles long. Musquash head is its east entrance point. The harbour is open to the south and only adapted for light draught vessels. A rock with 3 feet lies $\frac{1}{2}$ cable off west entrance point.

Light.—On Musquash head a square, wood tower, red and white bands, with dwelling attached, shows from a height of 112 feet above high water, a white fixed group flashing light. Hand fog horn attached.

Buoys.—A black and white bell buoy is moored in 10 fathoms at entrance to harbour, and a black automatic whistle buoy is moored in 26 fathoms, $1\frac{1}{2}$ miles south of Musquash Harbour lighthouse.

Port Charges.—Usual port charges and a harbour master.

Musquash Village.—About 5 miles inland from the harbour entrance—has post and telegraph offices, and is a station on the shore line section of the N.B. division of the C.P.R.

Newcastle Harbour, N.B.—is on the north bank of the Miramichi river about 4 miles above Chatham. The river opposite Newcastle is nearly half a mile wide, clear of shoals, with 4 to 6 fathoms water close to the wharves. There are 7 buoys in the harbour which is 8 miles in length up and down for sea going vessels.

Light.—On Lime-kiln bank, north shore of river just below the town, a white, square, wood tower, red roof, shows from a height of 87 feet above high water, a red fixed light.

Piers—Wharves.—Within the harbour radius of 8 miles are 8 large piers for loading lumber in sea going vessels, with not less than 22 feet at low water alongside. Besides these mill piers are 8 wharves along the water front of Newcastle, as follows: No. 1, known as the Anderson Furniture Co.'s wharf, 300 feet frontage and 300 feet deep; No. 2, deep water terminus of the Intercolonial Railway, frontage 100 feet; No. 3, J. Russell & Co.'s wharf, 500 feet long by 100 feet, with coal shed and warehouse; No. 4, wharf of D. & J. Ritchie, frontage 100 feet, 600 feet deep with three large warehouses for grain and general merchandise; No. 5, N. A. Parker's wharf, 125 feet frontage and 400 feet deep with two large warehouses for grain and merchandise; No. 6, public wharf, 200 feet frontage by 400 feet in depth with warehouses and coal shed; No. 7, M. Bannon's wharf, 100 feet frontage by 700 feet deep and warehouses for coal

and merchandise; No. 8, D. & J. Ritchie's wharf or slip for hauling out a vessel for repairs.

Port Charges.—Are harbour master's dues—50c for vessels of 50 tons and under up to \$7.00 for vessels over 700 tons, and sick mariners' dues. Port wardens' charges when services required.

Pilotage is under the control of the Miramichi Pilotage Authority and payment is compulsory.

Supplies.—All kinds obtainable at wholesale prices.

Communication.—Postal and telegraph, and a station on Moncton and Riviere du Loup branch of the New Brunswick division of Canadian National Railways.

Draw Bridge.—A steel draw bridge about half a mile long crosses from Newcastle to Chatham head opposite, allowing the largest steamers to pass.

The Town of Newcastle.—The county town of Northumberland County, is beautifully situated on high and commanding ground about $\frac{1}{4}$ of a mile from the river—has jail and courthouse, and extensive lumber trade; population in 1921: 3,507.

Trade.—For the fiscal year 1921-22, value of exports \$398,685; of imports, \$53,810.

Shipping.—During the fiscal year 1921-22, 35 vessels, register tonnage 11,594, entered the port; 28 vessels, register tonnage 9,158, cleared.

New Mills or Heron Channel Harbour, N.B.—is on south side of bay Chaleur between Heron island and the mainland, the island is 4 miles long NW. and SE. The channel has a least depth of 3 fathoms, but the width owing to shoals on both sides is only a little more than 200 yards.

Heron rock with 6 feet on it, lies nearly in mid channel abreast Beaver point on the mainland; it is marked by a red can buoy.

Light.—On NE. side of Heron island, a white, square, wood tower shows from a height of 69 feet above high water, a white fixed light.

Wharves.—A wharf with 2 feet at outer end low water springs, is on SW. side of Heron island. There is a wharf at Beaver point with shed and storehouse with 16 feet at outer end of low water. At New Mills there are no wharves. Vessels load lumber from lighters.

Communication.—Postal and telegraph, and New Mills is a station on the Moncton and Riviere du Loup branch of N.B. division of Canadian National system.

North Head Harbour, N.B.—lies on east side of Grand Manan island, and is the northern portion of Long island bay, the entrance points of which are Swallow Tail point on the north and NW. point of Long island on the south. Flag point, nearly half a mile westward of Swallow Tail point, is the NE. point of North head harbour, where there is anchorage in $5\frac{1}{2}$ fathoms clay, exposed however to SE. winds.

Light.—On Swallow Tail point, a white, octagonal, wood tower, dwelling nearby, shows from a height of 148 feet above high water, a white occulting light. A fog bell is operated in connection with the light.

Bell-Buoy.—A red buoy marks Net rocks, dry at low water, 2 cables southward of Flat point.

Signal Station.—Swallow Tail lighthouse is a signal station.

Village of North Head lies three-quarters of a mile NW. of Flag point—has a chapel and post and telegraph offices.

Grand Manan SS. Co., between St. John and Grand Manan, calls weekly.

Shipping.—During the fiscal year 1921-22, 302 vessels, register tonnage 35,663, entered the port; 318 vessels, register tonnage 35,349, cleared.

Richibucto Harbour—east coast of New Brunswick is at the mouth of the Richibucto river which is next in importance for navigable distance and depth of water to the Miramichi among the New Brunswick rivers. It is navigable for boats nearly to the head of the tide, a distance of 22 miles following the stream in a general SW. direction.

The entrance to the Richibucto is about $3\frac{1}{2}$ cables wide and lies between two sand bars, several miles in length, called the North and South beaches, on which there are sand hills 30 feet high.

At about three miles within the entrance and just below Richibucto town the river is 4 cables wide; it contracts to $1\frac{1}{2}$ cables at $1\frac{3}{4}$ miles further up, and then expands again for a considerable distance and is nowhere less than 160 yards broad, nearly to the end of the navigation; although the channel between mud banks nearly dry when the tide is out, is much narrower.

Vessels able to enter the river can be taken about 13 miles up from the entrance; the depth of the channel varies in that distance from 3 to 9 fathoms over mud bottom.

The Bar extends eastwards and parallel to South beach for about 2 miles from North beach; there is a rock in the eastern part, but the remainder is sand, nearly dry at low water.

A narrow channel over the bar shifts with gales and action of the ice. The channel across the bar is dredged through a cut 3,600 feet long, 150 to 200 feet wide and $13\frac{1}{2}$ to $16\frac{1}{2}$ feet deep at low water springs.

Buoys.—A black bell buoy outside the bar, and other buoys mark the channel in places. They are moved as required.

Anchorage.—There is open anchorage off the bar in 9 fathoms over sand which affords good holding ground.

Pilots.—The branch pilots of Richibucto river are capable, and keep a good lookout for vessels from the beach at the mouth of the river.

Lights.—On Richibucto head is a white, fixed, group flashing light 70 feet above high water (Lat. $46^{\circ} 40'$ N. long. $64^{\circ} 42'$ W.) Three pairs of leading lights indicate the channel over the bar and to the river entrance; their positions are altered to suit the channel:—

The bar range situated on South beach, white fixed.

The channel range also situated on South beach, red fixed.

The North Beach range, white fixed.

Directions.—The bar may be safely approached from seaward to the depth of 6 fathoms at any time of tide.

To enter the river a pilot is necessary, since the bar is subject to change. The leading lights lead in, in the order given.

Tides.—Springs rise four feet, neaps $2\frac{1}{2}$ feet at Richibucto river.

Lifeboat.—There is a lifeboat station on the North beach.

Port Charges.—Are Harbour master and sick mariners' dues.

Wharves.—There are several small wharves in the harbour, a Dominion Government wharf 200 feet long by 40 feet wide with a railway spur to the head, 14 feet at the head and east side at low water, and 18 feet at high water; there are three lobster factory wharves, one on the North beach and 2 on South beach. Jardine wharf is above the town of Richibucto.

Richibucto Town.—is situated between three and four miles up the river on the left bank. It is the capital town of Kent county and contains a church, chapel, court-house, etc.

A highway bridge crosses the river between Hughes point and Jardine's wharf, with a central span of 308 feet. There is a station of the Kent Northern Railway at Richibucto.

Shipping.—During the fiscal year 1921-22, 61 vessels register tonnage 3,632 entered and cleared the port.

Lloyd's Agent.—H. H. James.

Sackville Harbour, N.B.—is at the mouth of the Tantramar river flowing into Cumberland basin. A little over a mile NE. of Barnes (Woody) point in the narrow channel known as Sackville, anchorage is in 4 fathoms of water, where vessels should moor. Eastward of this anchorage only small vessels can lie afloat at low water.

Light.—On Barnes (Woody point) a white, square, wood tower, shows from a height of 35 feet above high water a white fixed light.

Wharves.—There are two wharves in the harbour one with 22 feet water alongside and one with 18 feet at high water. A railroad spur from main line $\frac{1}{4}$ mile long runs to one wharf.

Tides.—Rise $45\frac{1}{2}$ feet springs, 38 neaps at Sackville.

Communication.—Sackville is a station on Halifax and Moncton branch of Canadian National Railways, and a terminal of the Cape Tormentine to Sackville branch of the same system. Has telegraphic connection with general systems.

Town of Sackville.—Westmoreland Co., is situated $2\frac{1}{3}$ miles NW. of the mouth of Tantramar river.

Is a port of entry, and contains hotels, churches, schools, mills, factories and foundries. Population in 1921 was 2,173.

Trade.—For the fiscal year 1921-22, value of imports \$102,158; of exports \$12,103.

Shipping.—In 1921, 2 vessels register tonnage 296 entered and cleared the port.

Seal Cove Harbour, N.B.—on SE. side of Grand Manan island lies between Big Wood island on the SE. side of the harbour and Grand Manan island on the NW. side, the SE. point, of south west head of Grand Manan being its NW. entrance point; 6 to 10 fathoms can be carried to the anchorage at its head in 4 to 5 fathoms, mud, well sheltered except from the south. Southerly gales throw in a considerable sea.

Light.—On SW. side of South-west head, a white, square, wood, tower, dwelling attached, shows from a height of 200 feet above high water, a white fixed group flashing light.

Whistle Buoy.—A black and white vertically striped iron whistle-buoy, 6 cables southward of the lighthouse, marks the NW. side of a bank with $5\frac{3}{4}$ fathoms least water, off South-west head.

Bell-Buoy.—A black buoy known as Seal Cove buoy is moored, $1\frac{4}{10}$ miles ESE. from lighthouse at entrance to Seal Cove.

Directions.—See 1921 Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot", page 276, covering chart No. 2539.

Life Boat.—A life boat is stationed at Little Wood island south of Big Wood island.

Seal-Cove Settlement.—At the head of Seal cove is a settlement with post and telegraph offices, and a good watering place. The Grand Manan SS. Co., between St. John and Grand Manan, calls weekly.

Shediac Harbour, N.B.—east coast—is entered from Shediac bay is the only port on this part of the coast to which a vessel in distress can run for refuge.

Snake point, the south point of Snake island, is 7 cables NW. from Pointe du Chene and the harbour lies between them.

The harbour space where vessels moor in 13 to 16 feet at low water, is about 6 cables long and $1\frac{1}{2}$ to 3 cables wide, but vessels drawing 7 to 8 feet can pass through the bay within Shediac island.

The depth that can be carried into the harbour is 15 feet at low water ordinary springs. The deep part of the harbour is unsafe, only in NE. gales.

Lights—Buoys.—For description of lights and buoys in Shediac bay and harbour and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 229 to 234 inclusive, covering chart No. 1943, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Tides.—In Shediac bay tides are complicated, the highest tides occur at full and new moon and rise 4 feet above the lowest water. At other times the rise of tide is about 3 feet.

Ice.—Shediac bay is generally completely closed by ice from the first week in December to end of April.

Directions.—For entering Shediac harbour, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 232 and 233, covering chart No. 1943.

Pilotage is compulsory. Is under the Shediac Pilotage Authority. The rates are \$1.50 per foot draught inwards and \$1.50 per foot draught outwards.

Vessels propelled wholly or in part by steam shall pay additional four cents per ton registered tonnage. Movages, including mooring, etc., \$4.

Wharves.—At Pointe-du-Chene is a wharf 1,950 feet long, its outer end divides into two parts making a safe dock 163 feet wide at the outer end, 50 feet at the inner end; the dock is 620 feet long.

There are inner and outer breakwaters, about 600 feet long each and 80 feet apart, 400 feet from north side of wharf, and a ballast wharf connects the outer breakwater with the wharf.

On the railway wharf at Pointe du Chene is a spur from the Intercolonial Railway, connecting with P.E.I. by boat.

There is a shed on the wharf 420 feet by 32 feet, with 3 railway sidings on the south side, and 2 on the north side. Derricks are used on the wharf to load and unload from cars. At the ends of the wharf and in the basin there is a depth of about 16 feet at low water.

The government wharf is 1,107 feet long, a berth has been dredged on each side at its head, and a basin 380 feet by 175 feet, and from the basin to the deeper water in the harbour, is a dredged channel with depth of 10 feet at low water, springs.

Pointe du Chene is the terminus of a branch of the Intercolonial Railway and the entrepot of trade to P.E.I. The village contains several stores and hotels, and is a popular bathing resort.

Storm Signals are shown at Pointe du Chene.

Supplies—Coal.—Supplies of all kinds are obtainable at Pointe du Chene, and coal in limited quantity.

Water is scarce at Shediac, may be bought from a contractor, or obtained at high water from river which enters the harbour just west of the town, but is not good.

Communication.—Postal and telegraph—steamboats of the P.E.I. Steam Navigation Co. run daily to Summerside.

The Town of Shediac, Westmoreland Co., is at the SW. corner of the harbour, about $1\frac{1}{3}$ miles SE. of Pointe du Chene. The Scoudouc river enters the harbour just west of Shediac and is spanned by a bridge at its mouth at which is also a sawmill. Another bridge crosses the Shediac river at the NW. end of the harbour, where there is also a sawmill. It has 4 churches, and the population in 1921 was 1,967. The country in the neighbourhood is fertile and well settled.

Shipping.—During the fiscal year 1921-22, 23 vessels, register tonnage 808, entered the port; 21 vessels, register tonnage 604, cleared.

Shippigan Harbour, N.B.—On the mainland off the west end of Shippigan island is entered on the southward from the gulf of St. Lawrence through Shippigan gully and on the north from Chaleur bay through Shippigan sound. A shifting bar at the entrance of Shippigan gully is dry at low water but there is generally a channel at low water with 4 to 5 feet. Breakwaters have been constructed at the seaward entrance to the gully.

The channel leading into the harbour from the sound is deep but narrow and crooked, with no leading marks.

Shippigan harbour itself is a narrow channel at the southern point of Basse bay, about $\frac{3}{4}$ of a mile SE. of Bernache point on which is a windmill, this channel runs into Shippigan gully; opposite the harbour on the mainland is Shippigan village and church.

The channel has 2 to 4 fathoms of water, between mud shoals, nearly dry at low tide. From the village church to the gully is $2\frac{1}{2}$ miles, and close to the channel a stream enters Basse bay suitable for watering.

Communication.—Shippigan is a terminal of the Caraquet railway.

Wharf.—A railway wharf with 12 feet at the head low water springs, extends to the channel off Shippigan.

Tides.—Rise $5\frac{1}{2}$ feet springs, 3 feet neaps.

Port Charges.—Are harbour master's and sick mariners' dues.

Pilotage is under Caraquet Pilotage Authority and the rates are for vessels not over 60 tons register tonnage when employing pilots \$6.00; over 60 tons and not over 80 tons, \$9.00; over 80 tons \$1.20 per foot draught inward, and \$1.00 per foot draught outward.

Ice.—Shippigan sound is usually completely closed from December 1 to May 10.

Lights—Buoys.—For a description of lights and buoys and other aids to navigation in Shippegan harbour and its approaches from the gully and from the sound, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, pages 293 and 299 to 301, covering chart No. 1633, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast."

Directions.—For entering Shippigan harbour from the gully, see 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 293. From the sound, page 301, covering chart No. 1633.

Storm Signals are shown at Shippigan.

Shipping.—During the fiscal year 1921-22, 102 vessels, register tonnage 2,689, entered the port; 115 vessels, register tonnage 2,892, cleared.

Lloyd's Agent.—G. R. Marquis.

St. Andrews Harbour, N.B.—In Passamaquoddy bay—lies between the town of St. Andrews on a peninsula of the mainland on the north, and Navy island $1\frac{1}{10}$ miles long NW. and SE. on the south. It has an average width of about $\frac{3}{4}$ of a mile at high water.

North point on the St. Andrews side is at the junction of the two entrance channels on the east and west sides of the harbour.

The east entrance is between Tongue shoal light and Navy bar light, and marked by buoys, red on starboard side entering and black on port, and dredged to 12 feet at low water.

The west entrance is west of Navy island and has filled in to about 5 feet. The port is open all year.

Lights—Buoys—Beacons, Etc.—For a description of lights and other aids to navigation in the harbour of St. Andrews and approaches. See 1921

Admiralty "Nova Scotia (southeast coast) and Bay of Fundy Pilot," pages 294 and 295, covering chart No. 464, also Department's 1923 "List of Lights and Fog Signals".

Port Charges.—Harbour master's and sick mariners' dues.

Pilotage.—No pilots in the district.

Tides.—Springs rise 25 feet, neaps $21\frac{1}{2}$ feet.

Wharves.—The principal wharves in the harbour are the new Canadian Pacific Railway wharf, which is about 350 feet long and 60 feet wide. On this wharf is a warehouse 250 feet by 30 feet wide for receiving freight. Across the outer end of the wharf the water is 14 feet deep at low water. A railway track is laid to the end of this wharf, alongside the warehouse, and freight is loaded into and from cars.

Another wharf is the old Canadian Pacific Railway wharf, 300 feet long and 45 feet wide, track to outer end.

There is a wharf near the Customs House used by a fish curing establishment and a wharf for the local coal trade. Both these wharves are dry at low tide.

The public wharf extends from the public square 800 feet into the harbour. The outer part is 24 feet wide, with a block or T. which has a slip that is raised or lowered according to the tides. On the SE. side of the T. is a floating stage connecting with the wharf, enabling passengers to land and embark.

Supplies.—Provisions and water easily obtained, but deck and engine-room stores for large vessels cannot be obtained without at least 24 hours notice.

Hospital.—There is a hospital for sick and injured seamen.

Storm Signals.—Are hoisted near North point.

Communication.—St. Andrews is one of the terminals of the Canadian Pacific Railway, and connected with the Dominion and U.S. rail and telegraph systems. There is daily steamer connection with St. Stephen, and services to St. John, N.B. and Eastport, Me.

The Town of St. Andrews, Charlotte Co., is extremely picturesque, and a favourite summer resort for people from Eastern Canada and the United States. It has a number of very beautiful private residences. On the hill at the back of the town, the Algonquin, a large C.P.R. summer hotel is a conspicuous object; another excellent hotel is Kennedy's on the principal street fronting the harbour.

It has 5 churches, schools, a branch of the Bank of Nova Scotia and several Moving Picture theatres. Population in 1921: 1,065, this is more than doubled during the summer months.

Trade.—Preserved fish of various kinds form the chief export. For the fiscal year 1921-22, the value of the exports was \$220,816; of the imports \$152,204.

Shipping.—During the fiscal year 1921-22, 1,423 vessels, register tonnage 56,515 entered the port; 1,428 vessels, register tonnage 56,280 cleared.

St. George Harbour, N.B.—is $3\frac{1}{2}$ miles up the Magaguadavic river from Midjik bluff its south entrance point, the river is navigable for small craft to the falls and town of St. George.

Anchorage in 10 fathoms can be had $3\frac{1}{2}$ cable SE. of lighthouse on Midjik bluff.

Light.—On Midjik bluff a white, square, wood tower, shows from a height of 130 feet above high water, a white occulting light.

Wharf.—There is a government wharf with about 20 feet water alongside at high tide and from which lumber is shipped.

Port Charges.—Same as other bay of Fundy ports.

Ship's Supplies.—With the exception of provisions not available to any extent.

Tides.—Rise 27 feet springs, 18 feet neaps.

Communication, etc.—St. George has post and telegraph offices, and is a station on the C.P.R. Railway; had in 1921 a population of 1,110.

Shipping.—During the fiscal year 1921-22, 152 vessels, register tonnage 8,016 entered the port; 145 vessels, register tonnage 7,574 cleared.

St. John Harbour, N.B.—on north side of bay of Fundy—is at the head of the bay into which the St. John river, the largest in New Brunswick, flows.

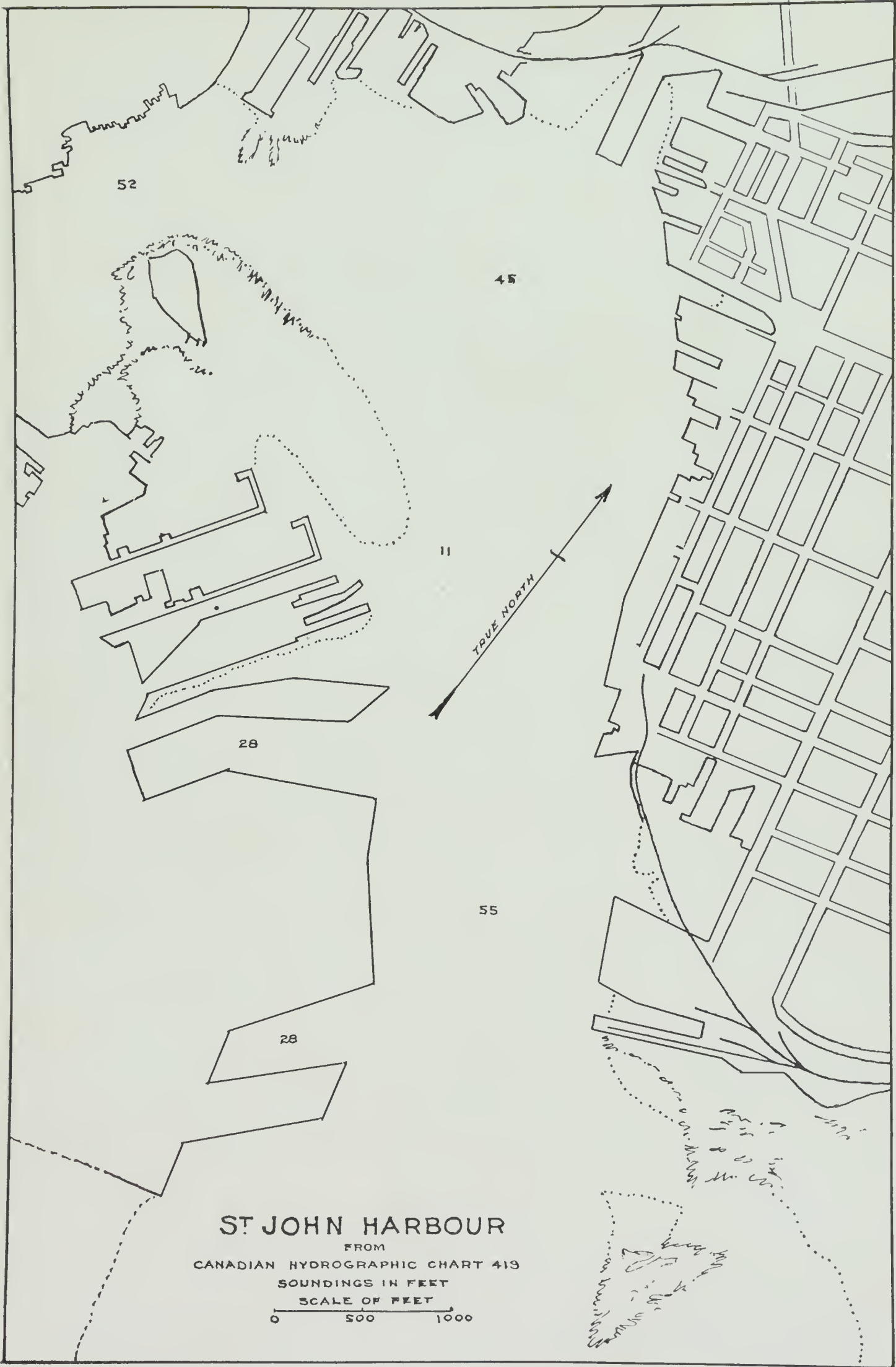
Partridge island, 600 yards long NE. and SW. lies $2\frac{1}{2}$ miles in a southerly direction from the head of the harbour protecting it from the southward.

A little more than $\frac{1}{2}$ mile NW. of west extreme of Partridge island is Negro point from which a breakwater about 750 yards long runs out in a southerly direction towards the centre of Partridge island, the passage between the outer end of the breakwater and Partridge island is $1\frac{1}{2}$ cables wide, with channel depth of 12 feet. This passage is known as the West channel and is only used by light draught vessels. The main channel into St. John harbour is eastward of Partridge island, a dredged channel begins $3\frac{1}{2}$ cables NE. from Partridge island lighthouse, the channel runs for 6,000 feet, with a general width of 650 feet, and depth of 28 feet towards the head of the harbour; after the dredged channel is passed the fairway into the harbour has depths of from 50 to 70 feet and a width of 2,000 feet. The depth of water along the wharves at St. John West is from 26 to 30 feet.

St. John is a winter port and open all year.

Anchorage.—For several miles southward of Partridge island the soundings range from 7 to 15 fathoms, and in this area is good anchorage over mud for vessels waiting for the tide. The best berth for vessels in the harbour itself, is a little north of Sand point wharves on west side of harbour.

Courtenay Bay is a large indentation immediately south of East St. John, a breakwater about 12 cables in length has been built out in a general S.W. direction from about the middle of the NE. shore of the bay to about abreast of the east side of St. John harbour, and a channel 500 feet wide with depth of 32 feet at low water, has been dredged close west of the breakwater. A dry dock, 1,150 feet long, 100 feet wide, with depth of 37 feet on the sill is being built close west of inner end of breakwater.



The intention is to utilize Courtenay bay as a part of the harbour of St. John.

Bridges.—Two bridges, a Cantilever Railway bridge and a Suspension bridge for general traffic, span the falls about one mile above the city. Two tide boards near the bridges indicate to vessels the clear head room at various stages of the tide. Owing to great rise and fall of tides the falls flow in either direction according to the state of the tide.

Tides.—Springs rise 25½ feet, neaps 21½ feet, at St. John. The range of tide at the head of the bay of Fundy as compared with that at St. John, is thus given by the Tidal Survey Branch of the Marine Department:

Comparison with St. John.—The range at the head of the bay of Fundy may best be appreciated by comparison with St. John, as shown below; where the principal ranges derived from the observations obtained, are placed together.

The figures for St. John are from tides registered during the seasons of 1904 and 1916 on the tide gauge there. The springs and neaps selected are in the months of August and September of 1904, and June and July of 1916, when perigee and apogee coincided with the full and change of the moon; and the intermediate neaps were closely at the moon's mean distance. The range given is the mean of pairs of consecutive high waters and low waters, as the diurnal inequality is thus eliminated. The figures for Cumberland basin are from the observations taken in 1870 by the engineers of the proposed Baie Verte canal. The months selected are October to December, when the above coincidence occurred in that year.

Description of Tide	St. John, N.B.		Cumber- land Basin	Burntcoat Head (Cobequid Bay)
	Range in feet	Differ- ence	Range in feet	Range in feet
At Perigee, Range at Spring Tides.....	26·60	6·68	46·46	50·50
At Apogee, Range at Spring Tides.....	19·92		35·55	40·18
Spring range, Mean of the above.....	23·26	5·22	41·01	45·34
Neap range, at Moon's mean distance.....	18·04		31·40	38·78
Average range during the month.....	20·65		36·20	42·06

Modification with the Progress of the Tide.—These values show that at St. John the difference in the range at perigee and apogee, is already greater than the difference in the range at ordinary spring and neap tides. The dominating influence of the moon's distance is thus apparent; and in the progress of the tide to the head of the bay, this factor develops in a much higher proportion than the spring or neap range does, as the figures show. We do not give the corresponding differences at the heads of the arms, as they may not be strictly comparative, in the circumstances. But the values afford an interesting example of the change in the character of the tide by the large increase in one of its features.

On the other hand, none of the inequalities increase in as high a ratio as the total range. The actual increase in the semi-monthly inequality from St. John to the head of the bay (for which the average at Cumberland basin and Burntcoat is taken) is from 6.75 feet to 10.60 feet yet the ratio of this increase is 1.57 which is less than the percentage increase in the total range.

The diurnal inequality acts similarly. The ratio of increase from St. John to Hopewell cape in Chignecto Channel is 1.22, and from St. John to Burntcoat 1.40, both of these being lower than the percentage increase in the range at the head of either arm.

The secondary undulation, which is already almost effaced at St. John, disappears altogether at the head of the bay.

SUMMARY OF FEATURES OF THE TIDE

The following description of the features of the tide in the bay of Fundy, is based chiefly on the observations at Burntcoat head in Cobequid bay, which are the best yet available.

The symmetry of the tide at the head of the bay of Fundy, is a very noteworthy feature. From the most careful tests at the equatorial tides, when the diurnal inequality disappears, the tide curve is quite symmetrical; without anything of the estuary feature indicated by a more rapid rise than fall. It is to be noted in this connection, that there is no river of any size running into either arm of the bay at its extreme end.

The effect of the moon's distance on the tide, is much greater than the change from springs to neaps. When perigee and apogee coincide with the new and full moon, this semi-monthly inequality or difference in the range of successive spring tides, is over 10 feet in both arms of the bay, where the highest tides occur; whereas the true difference in range between mean springs and mean neaps is much less.

The diurnal inequality, or difference in the level of successive high waters or low waters when the moon is at its maximum declination north or south of the equator, is so magnified that it amounts to 2.60 feet as a true maximum. But this diurnal inequality does not increase in as high a ratio as the total range of the tide, in its progress from St. John to the head of the bay. The inequality at H.W. and L.W. appears to be the same in amount; which corresponds with the symmetry of the tide itself.

Because of these variations, the behaviour of the tide is unusual. When perigee falls at the new or full moon, the height of the tide remains nearly the same during three-quarters of the month, because the height of the tide at the apogee springs is within a foot of the average neap tide. It is thus only once in such a month that the tide rises for a few days to an extreme height. This behaviour occurs in reality quite frequently, because perigee remains near to the new or full moon for several successive months, whereas it swings rapidly in passing the moon's quarters. It is thus quite possible for perigee springs of practically the same height to occur in three or four successive months.

Lights.—On highest part of Partridge island, an octagonal wood tower, vertical red and white stripes, shows 127 feet above high water a white flashing light. Diaphone on SW. end of island.

On Negro point breakwater outer end, a white open frame hexagonal tower on stone foundation shows 40 feet above high water a white occulting light. On south end of Courtenay bay breakwater is a red fixed light (privately owned) fog bell attached. On outer corner of shed No. 6 west side St. John a trestle on roof shows 37 feet above high water a red fixed light. Fog bell attached.

At Reid's point, on Prince William Street, foot of St. James Street, a lamp post shows 42 feet above high water a red and white fixed light.

Buoys.—A gas and bell buoy east of Partridge island marks the west side of the dredged channel. About 6 and $7\frac{1}{2}$ cables respectively NW. of this buoy 2 gas buoys mark east side of dredged channel. Opposite the innermost of these gas buoys a black iron bell buoy marks the turn on west side of dredged channel.

WHARVES AND PIERS

Berth No. 1.—Sand point wharves, wooden cribwork, length 275 feet, depth of water alongside 25 feet, lighted by electric incandescent lamps.

Berth No. 2.—Sand Point wharves, wooden cribwork, length 400 feet, depth alongside 30 feet, electric lighting.

Berth No. 3.—Sand Point wharves, wooden cribwork, length 410 feet, depth alongside 30 feet, electric lighting.

Berth No. 4.—Sand Point wharves, wooden cribwork, length 483 feet, deep water for only 375 feet, depth alongside 30 feet, electric lighting.

Berth No. 5.—Sand Point wharves, Pier, wooden cribwork wharves, backfill between, to about low water, length 525 feet, about 450 feet deep water, depth alongside 30 feet, electric lighting.

Berth No. 6.—Sand Point wharves, cribwork walls, backfill, length 780 feet, 600 feet owned by the city, depth alongside 30 feet, electric lighting.

Berth No. 6.—Extension Sand Point wharves, wooden cribwork to shed floor level, length 170 feet (including shed on No. 6 making a total of 780 feet) depth alongside 30 feet, electric incandescent lamps.

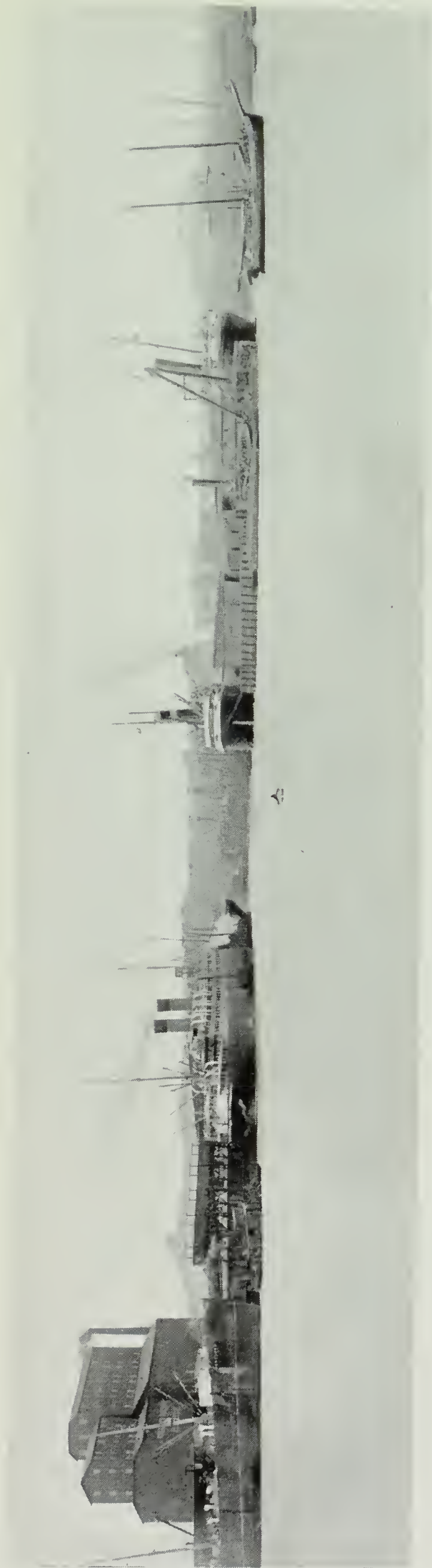
Berth No. 7.—Sand Point wharves, wooden cribwork to shed floor level, length 630 feet, depth alongside 30 feet, electric incandescent lamps.

Berth No. 7.—Extension Sand Point wharves, wooden cribwork quay wall to shed floor level, length 425 feet (225 feet owned by city), depth alongside 15 feet government portion, 14 feet out of 100 feet city portion, balance 6 feet, electric incandescent lamps.

Berth No. 14.—Beacon Bar wharves system, north portion owned by city, wooden cribwork; south portion owned by government, cribwork with concrete top quay wall, length, north portion 393 feet, south portion 312 feet, total 705 feet, electric incandescent lamps, depth alongside north portion 20 feet, south portion 30 feet, electric incandescent lamps.

Berth No. 15.—Beacon Bar wharves system; wooden cribwork base, concrete top quay wall, earth backfill length 865 feet, depth alongside 30 feet, electric incandescent lamps.

Pier No. 1, Berth 16.—Wooden cribwork base concrete top quay wall, earth backfill to about low water, length 800 feet, depth alongside 30 feet, electric incandescent lamps.



St. John Harbour, West Side.



St. John Harbour — Atlantic Sugar Refineries Ltd., East Side.

Pier No. 1, Berth 17.—Wooden cribwork base, concrete top quay wall, earth backfill to about low water, length 815 feet, depth alongside 10 to 15 feet.

Long Wharf Pier.—Wooden cribwork quay walls, ballast backfill to about low water, length east berth 540 feet, west berth 590 feet, depths alongside east berth out of 380 feet over 25 feet, next 75 feet over 20 feet; west berth out of 350 feet over 30 feet, next 50 feet over 25 feet, electric incandescent lamps.

Dominion Coal Co. Pier.—Wooden cribwork, length 301 feet end of pier, depths alongside 18 to 25 feet; electric incandescent lamps.

McLeods wharf (owned by the city).—Wooden cribwork, earth backfill, length 390 feet, depth alongside 25 feet, electric incandescent lamps.

Pettingills wharf (owned by the city).—Wooden cribwork, earth backfill, length 305 feet, depth alongside average of 20 feet, electric incandescent lamps.

C.P.R. Bay of Fundy wharf (owned by the city).—Wooden cribwork, earth backfill, length angle of wharf to south end 450 feet, depth alongside 20 feet average, electric incandescent lamps.

Eastern Steamship Co's wharf (owned by the city).—Wooden cribwork, length 200 feet depth alongside 8 to 32 feet, electric incandescent lamps.

Reids Point Wharf (owned by the city).—Wooden cribwork, length along harbour front 145 feet, depth below l. w. face 33 feet, electric incandescent lamps.

Atlantic Sugar Refinery's Wharf.—Wooden cribwork, ballast backfill, lengths, the end parallel to axis of harbour 490 feet, north side 600 feet, south side 640 feet, depths end of pier 25 feet, western 300 feet of northside, average 8 feet, balance from 5 to 8 feet, above l. w., south side average from 11 to 18 feet above l. w., electric incandescent lamps.

Marine and Fisheries Department Depot Pier.—Wooden cribwork, base, concrete top quay wall, earth backfill, length outer end 150 feet; eastern side 200 feet, western side 440 feet, depths at face average 16 feet east side 16 feet. to 10 feet, west side from 15 to 8 feet above low water, electric incandescent lamps.

Dominion Coal Co's Car Loading Plant Wharf.—Wooden cribwork, length 450 feet, depth alongside from low water to 10 feet below, electric incandescent lamps.

WAREHOUSES

Shed No. 1 on Berth No. 1 Sand Point wharves.—Wood, length 360 feet, breadth 70 feet, one story, floor area 31,850 square feet.

Shed No. 2 on Berth No. 2.—Wood, length 420 feet, breadth 70 feet, one story, floor area 26,950 square feet.

Shed No. 3 on Berth No. 3.—Wood, length 328 feet, breadth 70 feet, one story, floor area 22,960 square feet.

Shed No. 4 on Berth No. 4.—Wood, length 260 feet, breadth 70 feet, two stories, floor area 18,200 square feet.

Shed No. 5 on Berth No. 5.—Wood, length 450 feet, breadth 70 to 40 feet, one story, floor area 29,900 square feet.

Shed No. 6 on Berth No. 6.—Wood, length 508 feet, breadth 70 feet, one story, floor area 35,560 square feet.

Shed No. 6 Extension.—Wood, length 200 feet, breadth 70 feet, one story, floor area 14,000 square feet.

Shed No. 7 on Berth No. 7.—Wood, length 477 feet, breadth 80 feet, one story, floor area 38,200 square feet.

Shed No. 7 Extension.—Wood, length 155 feet, breadth 70 feet, one story, floor area 8,700 square feet.

Shed No. 14 on Berth No. 14, Beacon Bar Wharf system.—Wood, length 240 feet, breadth 80 feet, one story, floor area 20,780 square feet. On north portion two single story wood sheds, length 110 feet and 100 feet respectively, breadths 48 feet, floor areas 5,280 square feet, and 4,800 square feet respectively.

Shed No. 15 on Berth No. 15.—Wood, length 710 feet, breadth 80 feet, one story, floor area 56,800 square feet.

Shed " D " Cattle shed.—Wood, length 360 feet, breadth 80 feet, one story, floor area 28,800 square feet. Capacity 750 head.

Shed No. 16 on Berth No. 16.—Wood, length 787 feet, breadth 90 feet, one story, floor area 70,800 square feet.

C.N.R. Long Wharf shed.—Wood, length 509 feet, breadth 118 feet, one story, floor area 45,800 square feet.

Dominion Coal Co.'s Pocket.—Length 240 feet, breadth 30 feet, capacity 3,000 tons.

McLeods wharf shed.—Wood, length 331 feet, breadth 71 feet, one story, floor area 23,200 square feet.

Pettingill's wharf shed.—Wood, length 360 feet, breadth 71 feet, one story, floor area 13,500 square feet.

C.P.R. Bay of Fundy shed.—Wood, length 305 feet, width for 225 feet from north end 70 feet, narrowing to 20 feet at south end, one story, floor area 19,620 square feet.

Eastern Steamship Co's shed.—Wood, length 150 feet, breadth 170 feet, one story, floor area 12,750 square feet.

Office.—Length, 169 feet, breadth 169 feet, two stories, floor area 12,000 square feet, office at inshore end of wharf.

Reid Point shed.—Wood, length 118 feet, breadth 14 feet, one story; western 15 feet of shed, two stories, pilot office, floor area 3,870 square feet.

Atlantic Sugar Refineries sheds.—Lengths 307 feet, Sugar storehouse 185 feet, breadths 43 feet, Sugar storehouse 120 feet, one story, floor area 13,200 square feet and 26,400 square feet respectively.

Marine and Fisheries Marine Depot sheds.—Steel frame, asbestos covered, wood sided sheds, lengths 100 feet and 39 feet respectively, breadths 40 feet and $28\frac{1}{2}$ feet respectively, floor areas 4,000 square feet and 1,120 square feet respectively.

Dominion Coal Co's Car Loading Plant—No warehouse but travelling gantry elevating and discharging tower, length 450 feet, breadth 30 to 40 feet; for unloading coal from small steamers and barges and loading railway cars.

Docks.—St. John Dry Dock, length 1,150 feet, depth H.W.O.S. 42 feet, breadth at coping 146 feet.

Marine Blocks.—The 20 to 28 foot tide allows repairs to be made on hulls of small draught vessels on the following blocks: J. S. Gregory's blocks, No. 1,

150' long, elevation ends above L.W. $15\frac{1}{2}'$ and $13\frac{1}{2}'$. No. 2, 164' long, elevation ends above L.W. $9\frac{1}{2}'$ and $12\frac{1}{2}'$. No. 3, 260' long, elevation ends above L.W. $8\frac{1}{2}'$ and $11'$. J. M. Driscoll's Blocks, 148' long, elevation ends above L.W. $14'$ and $12'$.

SHIPBUILDING AND REPAIRING FIRMS

The following firms handle all kinds of machinery, and steel hull repairs to vessels not requiring to go into dry dock, or that are small enough to go on tidal blocks:—

St. John Dry Dock and Shipbuilding Co., Ltd., will before end of year be ready to handle repairs of all descriptions, and a shipbuilding yard is being planned.

James Fleming (Phoenix Foundry).

(a) Largest vessel built, 114' St. John Harbour Ferry *Ludlow*, 110' D.P.W. No. 12 suction dredge, etc.

(b) Have made repairs to largest transatlantic steamships that have come to St. John.

St. John Iron Works, Ltd.

(a) Largest vessel built Tug *Lord Kitchener*.

(b) Repairs made on largest steamships that have been in port.

Union Foundry and Mch. Works, Ltd.

(a) None.

(b) Repairs made on largest steamships that have been in port.

T. McAvity and Sons, Ltd.

(a) None.

(b) Repairs made on largest steamships that have been in port. Equipped to make largest castings, all metals.

J. Fred. Williamson, Ltd.

(a) None.

(b) Repairs made on machinery of river steamers, and harbour craft. Has manufactured machinery for a number of these.

C. S. Stephenson and Co.

(a) None.

(b) Repairs to all electric machinery, besides general light machine work.

Barton Electric Welding Co., Ltd.

(a) None.

(b) Welding repairs to all sized craft.

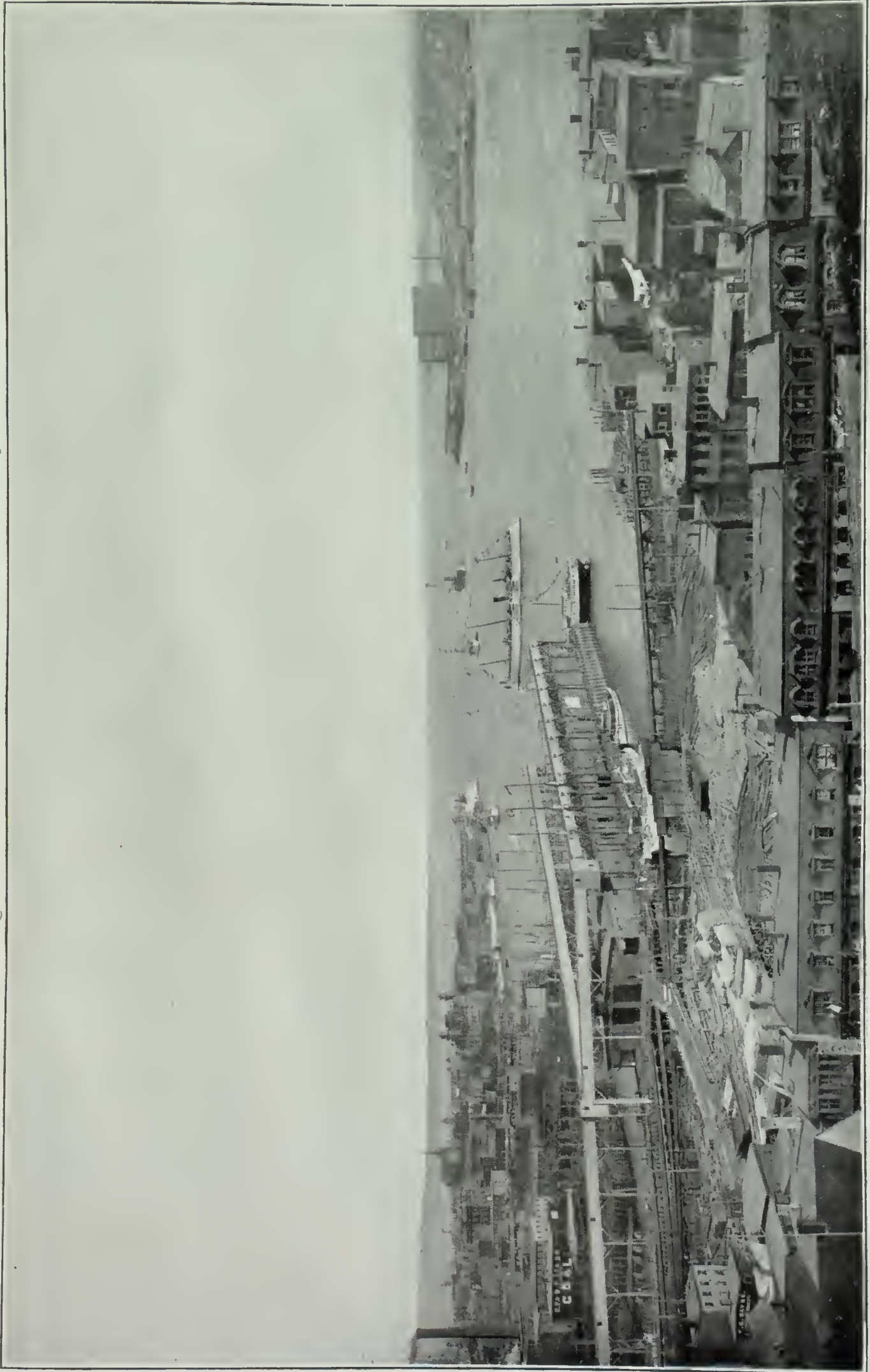
J. A. Grant and Co., Ltd.

(a) Two war time wooden steamers.

(b) Repairs to wooden vessels.

J. S. Gregory and other firms do repairing on wooden vessels.

Grain Elevators.—The Canadian Pacific Railway has a grain elevator at St. John West from which grain is conveyed to vessels lying at the company's wharf and at the Union wharves. The conveyor is 1,800 feet along the front of



St. John, N.B. City and Harbour from Fort Howe.

the wharves and a conveyor is now being constructed to another wharf. The capacity of the elevator is 1,032,000 bushels and it is in constant use during the winter season by transatlantic steamers. The Canadian Pacific Railway has an additional elevator of 1,000,000 bushels capacity.

The Intercolonial Railway has connected with its terminal wharf at York point an elevator with a capacity of 500,000 bushels, equipped with all the facilities for handling grain. The wharf is a crib wharf, tight faced, 535 feet long and 156 feet wide, two tracks, a shed 510 feet long by 118 feet wide, with doors on both sides for handling freight, and two tracks in the centre holding 13 cars. Depth of water at this track on each side of the wharf is 30 feet at low spring tide and the same on the harbour front. The Intercolonial Railway has also a crib wharf with large shed for the flour shipped to bay of Fundy ports.

Cold Storage.—A cold storage plant is owned by the New Brunswick Cold Storage Co., and is located beside and facing the International pier. Any large or small vessel running into the port may easily dock there at any time. There is railroad siding accommodation for 16 cars at one time, operated either by the Intercolonial or Canadian Pacific when required.

The cold store, in addition to large space for general storage, has accommodation of 80,000 cubic feet for fresh fish.

Coal.—Dominion Coal Co.—Normal stock 7,000 tons, capacity of bins, 3,000 tons; yard, 10,000 tons; three elevator barges, total 3,025 tons; two derrick barges, total 2,500 tons; four open barges, total 1,400 tons; three deck scows, total 450 tons.

Method of coaling: Steam elevator barge, 100 tons per hour; 3 deck scows with derricks and hand loaded tubs, 550 tons per day.

Oil.—Canadian Independent Oil Co., Ltd.—one steel tank 115 feet diameter, 30 feet high, maximum capacity 55,000 barrels, normal stock 40,000 barrels; method of supply by 2 barges, a tank steamer, and tank cars. Rate of oiling 150 tons or 990 barrels per hour.

New dock at entrance to dry dock is connected by 10 inch pipe to tank so steamers can be loaded or unloaded there.

The Imperial Oil Limited and the Canadian Oil Co. have tanks for kerosene, gasoline, and lubricating oils, but do not supply fuel oil to steamships.

Supplies of all kinds readily obtainable and plentiful.

Water.—All the larger berths are equipped with pipes, connected to the city water mains, to which hose connections are made to vessels at berths.

The water is suitable for all boilers and for drinking.

There is one water barge owned by Furness Withy Company, used for watering vessels at anchorage. Capacity 2,800 gallons, time of unloading 1 hour, 1½ inch hose.

The tugboat Neptune, owned by same firm, has water tankage of 8,000 gallons. Time of unloading, 35 minutes.

Port Charges.—Harbour master's and anchorage fees regulated by the city corporation, the harbour authorities; Dominion Government charge for sick mariners' dues, 2 cents per ton collected three times a year, and wharfage dues.

Pilotage is under the control of the Minister of Marine and Fisheries and the rates are: Steamships—\$3 per foot draught of water inwards and \$3 per foot draught of water outwards. If pilot required down the bay of Fundy an addition rate of \$2.75 per foot draught of water will be charged, together with reasonable travelling expenses.

Sailing vessels: \$2 per foot draught of water inwards and \$1.50 per foot draught of water outwards. If a pilot is required down the bay of Fundy an additional rate of \$2 per foot draught of water will be charged, together with reasonable travelling expenses.

Movages—Ships under 1,000 tons if a pilot is employed \$5 per move, and all ships 1,000 tons and under 4,000 tons \$10, and 4,000 tons and over \$15. Compass adjusting \$10, \$15 for trial trips, and \$20 for trial trips if compasses are adjusted at the same time, in addition to movage charge. If compass adjusting and trial trips be made outside of pilotage limits and extend over six hours \$25, and an extra \$10 for every additional six hours, or part thereof, in addition to the regular pilotage dues outwards and inwards.

Time Ball.—A time ball is dropped daily excepting Sundays at the Observatory on northern tower of the Custom house.

Storm Signals are hoisted at St. John.

Radio-Telegraph.—A station is established on Partridge island, range 250 nautical miles, call letters V.C.V.

Hospital.—There is a marine hospital at St. John where seamen can receive medical treatment.

Quarantine.—A quarantine station is established on Partridge island, also an immigration hospital.

Communication.—Numerous passenger lines of steamers keep up communication with ports in the Maritime Provinces, bay of Fundy, the United States, Montreal, and on the St. Lawrence route. The passenger traffic with these ports is especially large in the summer season. Trade with the West Indies forms an important item in the operations of this port.

Owing to its favourable location and extensive railroad communication with all parts of Canada and the United States, a number of ocean-going liners and ocean-going steamers enter and depart from this port during the winter especially.

St. John has constant steamer communication with the United States and the British Isles. It is connected with Halifax and Quebec by the Intercolonial; with Fredericton, New Brunswick, and the United States by other lines; and with Montreal by the Canadian Pacific; there is also a shorter route to Quebec than the Intercolonial. St. John is connected by telegraph with all parts of the United States and Canada.

OVERSEAS STEAMSHIP LINES OPERATING FROM ST. JOHN AND ROUTES

Canadian Pacific Ocean Services.....	British ports.
Canadian Government Merchant Marine.....	West Indies.
Anchor-Donaldson Lines	Glasgow.
Cunard Line.....	Avonmouth.
Canada Steamship Lines Ltd.....	Havre and Bordeaux, France
Elder Dempster & Co., Ltd.	South Africa.
Furness-Withy Lines	London.
Furness-Withy Lines	Antwerp, Belgium.
Head Lines	Belfast, Dublin, Avonmouth.
Houston Lines	South America.
Manchester Lines	Manchester, England.
Marine Navigation Co., Ltd.	St. Nazaire, France.
New Zealand Shipping Co.	New Zealand and Australia.
Royal Mail Steamship Co.....	West Indies and Demerara.

City of St. John.—Comprises 3 distinct towns, East St. John, north of Courtenay bay, the main town built on the peninsula projecting into the harbour on its east side, and Carleton or West St. John on the west side of the harbour.

It is the chief commercial city of New Brunswick and an important distributing centre. Has a number of hotels, 40 churches, 17 banks, two theatres, and mills, factories, and industrial plants of all sorts, and all the accessories of a modern city.

In 1920 St. John had 302 industrial establishments employing 4,630 hands, value of products \$17,895,292.

Population in 1921 was 47,166.

Trade.—The commerce of St. John, particularly the winter trade, is considerable. Its chief articles of export are grain, lumber, pulp and paper, and agricultural products; general merchandise, and iron and steel manufactures are the leading articles of import.

For the fiscal year 1921-22, value of exports \$49,451,455; of imports, \$21.-369,385.

Shipping.—During the fiscal year 1921-22, 2,416 vessels, register tonnage 1,367,686, entered the port; 2,422 vessels, register tonnage 1,367,609, cleared.

Lloyd's Agent.—Charles McLauchlan, 71 Dock Street.

Lloyd's Surveyor.—C. E. Dalton.

St. Martins Harbour (Quaco), N.B.—is on the north coast of the bay of Fundy, 30 miles east of St. John. In the bay itself is good anchorage in 10 fathoms.

Quaco shoal at the mouth of the bay is about 1 mile in length NE. and SW. with least depth of water 1½ fathoms and deep water all round.

At the entrance of Vaughan creek which flows into the bay two breakwaters form a small harbour for coasting vessels. Inside the harbour is crib-work with 17 feet at one end and 12 to 14 at the other at high water.

The Government wharf is at the head of the harbour, where the shipyard formerly was; it is 240 feet long, with 16 feet of water alongside at spring tide.

Irish river empties into the harbour and on it are several lumber mills.

Anchorage.—There is temporary anchorage in 5 to 6 fathoms mud ½ mile northward of Quaco head lighthouse and westward of Quaco shoal.

The anchorage is unsafe with winds from NE. through east to south.

Tides.—In Quaco bay springs rise 30 feet, neaps 25 feet.

Lights, etc.—For description of lights and other aids to navigation see “1921 Admiralty Nova Scotia (SE. coast) and Bay of Fundy Pilot,” pages 321 to 323 inclusive, covering chart No. 353, and Department’s “1923 List of Lights and Fog Signals on the Atlantic Coast.”

Directions.—See “1921 Admiralty Nova Scotia (SE. coast) and Bay of Fundy Pilot,” page 322, covering chart No. 353.

Port Charges.—A harbour master and usual port charges.

Communication.—St. Martins is the terminus of the St. Martins and Upham railway which taps the main line to St. John. It has a post-office and a telegraph office.

Shipping.—During the fiscal year 1921-22, 78 vessels, register tonnage 14,804, entered the port; 79 vessels, register tonnage 14,863, cleared.

St. Stephen Harbour, N.B.—is on the north bank of the Ste. Croix river at the head of the tidal water. Vessels of 600 tons and under load alongside the wharves and lie aground at low water in soft mud. The Ledge, an outport of St. Stephen, has ample water for large vessels to load afloat, and is capable of accommodating 500 vessels and is well sheltered.

Lights.—On Spruce point, a white square wooden structure shows a fixed white light 32 feet above high water, visible 10 miles. On Mark point is a light similar to the one on Spruce point.

Port Charges.—Harbour master’s dues and sick mariners’ dues.

Pilotage is under control of the Charlotte County Pilotage authority, and the rates are:—(1) From Seal island, Cross island, Little river, Southwest ledges of Grand Manan, Kents island, Long Island bay, Moose river and Bailey’s Mistake, to Saint Andrews, Saint Stephen, or any harbour or loading place in the county of Charlotte (except Campobello or the lines), pilotage inwards and outwards, \$2.25 per foot.

(2) From North head of Grand Manan, Beaver harbour and West Quoddy lighthouse to any port or harbour in the county of Charlotte (except Campobello or the lines) pilotage inwards or outwards, \$1.60 per foot.

(3) From Head Harbour lighthouse, Letite passage or Clam Cove head to any port or harbour in the county of Charlotte (except Campobello or the lines), pilotage inwards and outwards, \$1.50 per foot.

4. From or to Campobello or the lines the pilotage inwards or outwards to be 20 cents per foot less than the above rates.

Tides.—At St. Stephen springs rise $23\frac{1}{4}$ feet, neaps $20\frac{1}{4}$ feet.

Navigation Season.—During the first three months of the year Ste. Croix river is usually obstructed by ice and not navigable north of Joe’s point.

Wharves.—There are 10 wharves at St. Stephen with sheds on five of them. All the wharves at St. Stephen, excepting the town one are dry at low water. At the town wharf there is a depth of about 9 feet.

Communication.—St. Stephen is connected with Calais, opposite it, by a closed bridge. Is a terminus of the C.P.R., and connected by railroad and telegraph with the Canadian and U.S. systems.

There is an electric railway to Calais and Milltown, and steamers run to St. Andrews, Eastport, Campobello, and Manan.

Coal.—In limited quantity, and supplies can be had in both towns.

Repairs.—Minor repairs can be executed at Calais.

Town of St. Stephen.—Charlotte Co., is one of some importance, and contains a number of churches, hotels, schools, and lumber mills, cotton and soap factories.

In 1920, St. Stephen had 40 industrial establishments employing 952 hands, value of products \$6,250,947.

Population in 1921 was 3,452.

Trade.—The chief exports are cotton, lumber, soap, and agricultural products.

For the fiscal year 1921-22, value of imports \$1,411,724; of exports, \$359,058.

Shipping.—During the fiscal year 1921-22, 347 vessels, register tonnage 19,096, entered the port; 348 vessels, register tonnage 19,598, cleared.

Tracadie Harbour or Lagoon, N.B.—East coast on Northumberland strait is one of the several lagoons on the east coast of New Brunswick parted from the sea by long sandy beaches and entered by narrow channels termed gullies. The chief entrance to the lagoon at present is by the north gully. The North Tracadie river flows into the lagoon in a narrow channel between mud and sand flats. The north gully is $1\frac{1}{2}$ cables wide at high water, but the shifting bar of sand off it causes the depth, breadth, and direction of the channel to vary with the prevailing gales.

There are 2 to 3 fathoms water in the channel of the river opposite the village, but this can only be reached through the lagoon, which is only navigable by boats at high tide.

Depth of water in the harbour is from $7\frac{1}{2}$ to 15 feet at low water. The lagoon is 6 miles long and varies from $\frac{1}{4}$ of a mile to 1 mile in width, but except in the channels entering from the gullies, almost dry at low water.

Tides.—Springs rise 5 feet, neaps 3 feet.

Lights.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2; page 291, covering chart No. 1715, also Department's 1923 "List of Lights and Fog Signals on the Atlantic Coast".

Directions and Caution.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 2, page 291, covering chart No. 1715.

Port Charges.—Wharf and Harbour dues.

Supplies.—All ships supplies including coal can be obtained at the village.

Tracadie Village.—Is on the south side of the North Tracadie river, at its harbour entrance.

The village and district comprise about 2,000 people, and to provide for their wants a wharf 1,430 feet long with 7 feet at low water springs at its outer end has been built. There are 2 churches, and the Gulf shore railway runs from Tracadie to Pokemouche where it connects with the Caraquet railway. There is a lazaretto at Tracadie. The people are chiefly Acadians, and the principal industries are fishing, lumbering and agriculture.

QUEBEC.

Amherst Harbour, P.Q.—Magdalen islands—is the southernmost harbour of the islands, inside NE. end of Amherst island. Is entered between cape Gridley the SE. end of Cape Gridley peninsula on the north, and the sands to the south, the entrance is very narrow and rather crooked, and about $2\frac{1}{2}$ miles within Sandy hook, the NE. extremity of Amherst island.

The depth over the bar is 8 feet at low water springs. Within the bar is an area of about 2 cables square, well sheltered, with depths of 10 to 18 feet, mud. A breakwater is built out to the SE. from cape Gridley.

Wharves.—There is a small wharf close inside cape Gridley, and a landing pier extends 150 yards NW. from point Shea, on northern side of peninsula forming the north side of the harbour.

Light.—On outer end wharf at point Shea, a white, square, wood tower shows from 26 feet above high water a red fixed light. Hand fog horn operated in connection with light.

Directions.—See 1916 Admiralty “St. Lawrence Pilot,” Vol. 1, pages 73 and 74, covering chart No. 1134.

Ice.—Harbour usually freezes over by the 1st of January, and is clear of ice by 10th of May.

Village of Amherst is on north shore of harbour, has church and telegraph office. Steamer *R. W. Hendry* between Pictou and Magdalen islands, calls weekly.

Shipping.—During the fiscal year 1921-22, 161 vessels, register tonnage 27,648 entered and cleared the port.

Bersimis Harbour, P.Q.—is at mouth of Bersimis river, north shore of River St. Lawrence, immediately SW. of Outarde bay. The northern entrance point is about a mile from Bersimis point which is the south entrance point of Bersimis harbour, and the space between is practically dry at low water, with exception of a narrow centre channel.

A shifting sand bar runs eastward of Bersimis point for $1\frac{1}{4}$ miles, within the bar the channel is close to Bersimis point with a depth of 9 feet at low water. The river is navigable to the falls, about 40 miles up, by vessels drawing 12 feet.

Leading Lights.—Front-on beach on north shore of Bersimis river a mast, white diamond beacon, shows from a height of 30 feet above high water, a white fixed light.

A similar mast, 352 feet, 296° true from front light, shows a similar light.

The masts in line lead over the bar, and are movable to suit shifting of channel.

Buoys.—The entrance to the river is marked by 4 red buoys on starboard hand, and 4 black buoys on port hand.

Wharves.—There are two wharves in the harbour, one, 150 feet by 40 feet, the other 250 feet long, with elevator and loader for loading pulp wood, depth

of water at wharves is from 5 to 7 feet at low water. Vessels drawing 15 feet can pass from the wharves over the bar at high water.

Telegraph.—There is a telegraph station at Bersimis harbour but no post office.

Bic Harbour or Old Bic Harbour, P.Q.—is on the south side of the St. Lawrence $7\frac{1}{2}$ miles westward of Barnaby island and dries out at low water with the exception of a small bight between the entrance points. The eastern entrance point is formed by 2 small wooded islets, East and West Bicoque.

Old Bic Road.—Small vessels awaiting the tide anchor midway between the entrance points, in 12 to 14 feet water.

Tides.—Springs rise $15\frac{1}{2}$ feet, neaps $9\frac{1}{2}$ feet.

Wharves.—East Bicoque has a wharf 400 feet long with 9 feet at its outer end at low water, on its eastern side. The wharf is to be further lengthened eventually. A causeway joins the wharf to the mainland, whence a road runs round the eastern head of the harbour to the village of Bic.

There is an inner wharf at mouth of stream in eastern end of harbour, which accommodates trading schooners, the outer end has 4 feet at low water, and can only be approached at or near high water.

Supplies in small quantities can be obtained and water from two good streams flowing into the harbour at east and west ends.

Village of Bic is on main line of Intercolonial branch of Canadian National system,—and has post and telegraph offices and a somewhat conspicuous church.

Bonaventure Harbour, P.Q.—on north shore of bay Chaleur, is at the mouth of the Bonaventure river, about 2 miles NW. of Bonaventure point.

Bonaventure river with 2 feet over its bar, at low water, flows into the harbour from the eastward.

There is good anchorage in easterly winds, about midway between Bonaventure point and the mouth of the river.

A dredged channel 250 feet long and 160 feet wide, with 10 feet depth at low water springs, leads to the wharf at the mouth of the Bonaventure river.

Lights.—On Bonaventure point, a white, square, wood tower, shows a white occulting light.

From mast at end of wharf, west side of mouth of Bonaventure river, is shown at a height of 25 feet, above high water, a red fixed light.

Village of Bonaventure is on north side of river entrance, has church with tall spire, post and telegraph offices, and is a station on the Quebec Oriental Railway, from Matapedia to New Carlisle.

Bonne Esperance Bay and Harbour, P.Q.—lie on the north shore of the gulf of St. Lawrence, about 22 miles west of Blanc Sablons, which is at the west entrance of straits of Belle Isle.

The eastern side of Bonne Esperance bay is formed by Caribou island, the western by a group of islands of which Bonne Esperance island and Grand

island to the northward of it are the largest. The southern entrance to the bay is between Goddard islet off Caribou island and Beacon islet to the SW.

Bonne Esperance harbour entered from Bonne Esperance bay to the eastward, is between Bonne Esperance and Grand islands, which form a bight about 3 cables across each way.

Lion island and Whelp rock immediately to the east of it, lie eastward of Bonne Esperance island, and the main or southern entrance to the bay is narrowed to 3 cables between this rock and Goddard islet to the SE.

Depths.—The depths in the main channel are 10 to 13 fathoms, in the bay 12 to 26 fathoms mud, and in the harbour 12 to 16 fathoms mud.

Anchorage.—The best anchorage in Bonne Esperance harbour is near the centre in 12 fathoms mud.

Directions.—For entering Bonne Esperance harbour, see 1916 Admiralty "St. Lawrence Pilot," Vol. 1, page 162, covering chart No. 1138.

Tides.—Springs rise $5\frac{1}{2}$ feet, neaps 3 feet.

Water and wood are abundant on the mainland but not on the islands.

Settlement.—About 400 people live in the vicinity of Bonne Esperance bay and harbour.

Shipping.—During the fiscal year 1921-22, 34 vessels register tonnage 6,129 entered and cleared the port.

Carleton Road, P.Q.—North side of bay Chaleur, and west side of Tracadigash point, affords good and roomy anchorage, safe in all winds.

Inside Tracadigash point is a shallow lagoon, and on the north shore of the lagoon—Carleton village.

In rear of the village mount Carleton rises steeply 1,830 feet above the sea.

Anchorage.—There is anchorage anywhere in Carleton road in 5 to 6 fathoms. The best berth is in 5 fathoms with Carleton Church steeple bearing 78° true.

Tides.—Springs rise 8 feet, neaps 4 feet.

Lights.—On Tracadigash point, a white, square, wood tower, shows from a height of 38 feet above high water, a white occulting light. Hand fog horn in connection with light. On Carleton wharf a similar tower shows from a height of 20 feet above high water a red fixed light.

Directions.—See 1921 Admiralty "St. Lawrence Pilot," Vol. 2, pages 318 and 319, covering chart No. 1715.

Wharf.—A wharf 234 feet long with an average depth alongside of 12 feet at low tide extends from shore of Carleton road at about $\frac{3}{4}$ of a mile northward of Tracadigash point.

Hospital.—Sick Mariners go to the Custom House, $\frac{3}{4}$ of a mile east of the wharf.

Supplies.—All necessary food supplies are obtainable, and water from streams flowing into the harbour.

Communication.—Is a railway station on the Quebec Oriental road connecting with general system at Matapedia, has also a post office and telegraph office.

Carleton Village.—Carleton Co., is picturesque and a popular watering place; has church and custom house.

Chicoutimi Harbour, P.Q.—is on the south shore of the Saguenay river at the head of navigation. The Chicoutimi river falls into the Saguenay 1 mile above the town. The harbour can be used at all hours of the tide by steamers of from 800 to 1,500 tons, and at high tide by steamers of from 4,000 to 4,500 tons, and steamers can remain at all times moored to the wharves.

Lights.—Seven sets of range lights indicate the channel to Chicoutimi, six are fixed white, and are situated at porte St. Martin, river Valin, river Caribou (2 pairs) and river Moulin (2 pairs), the seventh, Price Monument range, situated just below the town, shows a fixed red light. There is a fixed red light at Chicoutimi pier, which is visible for a distance of 5 miles. This channel is well lighted and buoyed, and has a minimum depth of 16 feet at low water.

Buoys.—The channel between pointe Roches and Chicoutimi is marked by nine red and nine black can buoys.

Tugs.—There are two first-class tugs of over 300 tons, and a small one of 21 tons at Chicoutimi.

Piers—Wharves.—The Canada Steamship Co. have a large pier at which their steamers call during the season with passengers, mail and freight.

Price Bros. & Co. loaded during the past season 6 steamers with paper, and sawn timber for Europe.

Messrs. Coté, Boivin, and Compagnie du Port received last season large cargoes of coal and sulphur.

Alongside the Canada Steamship Co.'s pier, there is 16 feet at low water. The public wharf at the lower end of the town has also 16 feet alongside.

Communication.—Chicoutimi is a station on the Lake St. John branch of the Quebec division, Canadian National Railways, and on the Roberval—Saguenay road—Canada Steamships Saguenay line calls from 2 to 6 times a week.

The Town of Chicoutimi has an extensive export trade in wood pulp and lumber. The Chicoutimi mills produce more than 100,000 tons of wood pulp annually. There is also a large export trade in cheese.

Chicoutimi contains a large cathedral, post and telegraph offices, a marine hospital, court house, convent, hotel, and many other buildings.

In 1920 it had 41 industrial establishments employing 939 hands; value of products, \$7,182,543.

Population in 1921: 8,937.

Shipping.—During the fiscal year 1921-22, 122 vessels, register tonnage 101,568, entered and cleared the port.

Lloyd's Agent.—Capt. J. W. Foster.

Ellis Bay Harbour, P.Q.—at the NW. end of Anticosti island—is entered between cape Eagle to the eastward and cape Henry to the westward, about 2 miles apart—and extends northward for about 2 miles.

Reefs of limestone dry at low water, extend 6 cables westward and round cape Eagle, and 8 cables SE. of cape Henry. The entrance between the reefs is 5 cables wide between the depths of 3 fathoms. The bay affords tolerably sheltered anchorage and is the best harbour on the island.

Anchorage.—A good berth is in 3 fathoms, mud, about $2\frac{1}{2}$ cables from flats on either hand, and about half a mile from those at the head of the bay.

Leading Lights.—Front—On pier NW. side, 4 cables from shore, white cylindrical iron tower shows 35 feet above high water, a white fixed light.

At bottom of bay six-tenths of a mile, 343° true from front light, a similar tower shows 79 feet above high water, a similar light.

The lights in line bearing 343° true, lead into Ellis bay clear of reefs on either side.

Lights maintained by M. Menier for his own use and are only occasionally shown.

Beacons.—Two white beacons close together are on west side of White cliff opposite cape Henry on east side of harbour.

Directions.—See 1916 Admiralty "St. Lawrence Pilot," Vol. 1, pages 87 and 88, covering chart No. 308.

Tides.—Springs rise 6 feet, neaps 4 feet.

Breakwater Pier.—A breakwater pier, 3,700 feet long, extends from the east shore of the bay, northward of White cliff, and has depth of 13 feet at low water on sides for about 200 feet from its outer end.

Supplies—Water.—Fresh beef, bread and vegetables are obtainable at Ellis bay, as also ice, bait, and fishery stores. Water is supplied at the outer end of the pier from a water tower near the inner end.

Settlement of Ellis bay is on the shores of the harbour within the pier—contains sawmill and lobster factory, and the house of Mr. Menier, the proprietor of the island. A road connects the settlement with English bay—there is a telephone system and telegraph office.

Anticosti Island Agency Co.'s steamer *Savoy* from Quebec to Anticosti calls weekly.

Shipping.—During the fiscal year 1921-22, 18 vessels, register tonnage 3,140, entered and cleared the port.

Lloyd's Agents for Anticosti island.—South Point: E. Laprise. Southwest Point: A. Lemieux. West Point: A. Malouin.

Eskimo Harbour, P.Q.—Mingan islands—on north shore of gulf of St. Lawrence between Anticosti island and the mainland, lies between Eskimo island and Eskimo point on the mainland.

Eskimo point is bold to, and the anchorage space within this secure harbour is nearly $1\frac{1}{2}$ miles long east and west, with an average breadth of 4 cables, and depths of 5 to 15 fathoms, sand.

The southern approach to Eskimo harbour is through Walrus channel between Green and Walrus islands, to the eastward of Eskimo island.

Leading Lights.—Front—On shore $\frac{3}{4}$ of a mile eastward of Government wharf at Eskimo point, a red mast, white slatted triangle at top, shows from 35 feet above high water, a red fixed light.

A similar mast 479 feet, 340° true from front, shows from 60 feet above high water, a red fixed light. The lights in line bearing 340° true lead through Walrus channel to Eskimo harbour.

Tides.—Springs rise 6 feet, neaps $3\frac{1}{2}$ feet.

Wharf.—At Eskimo point is a government wharf with a T head, with a depth of 45 feet.

Village of Eskimo Point.—Is the chief village on the north shore of the gulf, contains post and telegraph offices, a Roman Catholic church, convent, hospital, and stores, and has a considerable trade in fish, furs, and oil.

Clark SS. Co. Ltd., between Quebec and Natashkwan calls fortnightly.

Shipping.—During the fiscal year 1921-22, 66 vessels register tonnage 19,793 entered and cleared the port.

Gaspé Harbour, P.Q.—On east shore of Gaspé peninsula—is entered from Gaspé bay.



Gaspé Basin

From the NW. side of cape Haldimand, Sandy beach extends northward for about $1\frac{1}{2}$ miles—the beach is convex to seaward, with shoal water extending for about 3 cables off it all along its seaward side. On the harbour side the beach is concave and steep to; the beach forms a natural breakwater.

From the north end of Sandy beach, a spit runs in a NE. direction for about 3 cables with a light on its outer end. From the north shore opposite Sandy beach spit, a projection called the peninsula runs out in a westerly direction for about $1\frac{1}{10}$ miles.

The entrance to Gaspé harbour is between the peninsula and Sandy beach spit to the southward, and is $4\frac{1}{4}$ cables wide between depths of 3 fathoms, with depth of 11 fathoms in the middle.

Gaspé Harbour inside Sandy beach extends for about $4\frac{1}{2}$ miles NW. and SE., with an average width of about 1 mile and depths of from 4 to 11 fathoms, mud, completely sheltered.

North West Arm.—Is a continuation of the harbour to the NW., and is only navigable for boats for about 6 miles above the peninsula.

South West Arm.—The entrance to SW. arm, separated from the North West arm by Arnold bluff, is 360 yards wide between two sandy points, but the navigable channel is narrowed to 120 yards, and 27 feet can be carried in mid channel.

Gaspé Basin.—The deep water of the South West arm which continues for $\frac{3}{4}$ of a



Entrance and Harbour, Gaspé, Que.

mile within the entrance is named Gaspé basin, and has a depth of from 5 to 9 fathoms, mud, with sufficient room to hold a number of vessels.

Lights.—For description of lights in Gaspé harbour and approaches and further hydrographic information, see 1916 Admiralty "St. Lawrence Pilot," Vol. 1, pages 96 to 101 inclusive, covering chart No. 1163.

Ice.—The harbour usually freezes over by the 10th of December, but the entrance not till the 25th, and is clear by the 10th of May.

Tides.—Springs rise 5 feet, neaps 3 feet.

Wharves.—A wharf, 300 feet long with depth of 40 feet at the outer end on the south side of the harbour, is the terminal of the Atlantic, Quebec and Western Railway. About a mile eastward of this wharf are the wharves of the York Lumber Co. at which the largest vessels load directly from the Co's mills.

In Gaspé basin are 7 wharves for loading purposes, ranging from 300 to 400 feet in length with an average depth of 24 feet alongside.

The following lumber firms have establishments in Gaspé Bay: Huard Smith Paper Mills, Ltd., Shepherd and Morse and St. Maurice Lumber Co.

Storm Signals are shown at Gaspé.

Port Charges.—Harbour master's and sick mariner's dues as regulated by Canada Shipping Act, Chapter 113.

Supplies—Water.—Ships' provisions are obtainable, and water from a stream inside the southern entrance point of Gaspé basin.

Pilotage.—There is no pilotage authority and vessels depend upon fishermen to pilot them when necessary.

Communication.—Postal and telegraph—Terminus of Atlantic, Quebec, and Western Railway—New Carlisle to Gaspé. Clark SS. Co., Ltd.—Montreal to Gaspé, Bay Chaleurs, and P.E.I. ports, calls fortnightly.

Village of Gaspé.—Is built on north side of Gaspé basin and composed chiefly of farmers and fishermen, most of them Jerseymen or descendants of Jerseymen. Population about 700. The place has a considerable export trade in fish and lumber.

Trade.—For the fiscal year 1921-22, value of exports, \$494,705; of imports, \$50,556.

Shipping.—During the fiscal year 1921-22, 89 vessels, register tonnage 40,243 entered the port; 97 vessels, register tonnage 41,641, cleared.

Lloyd's Agent.—S. A. Veit.

Godfroy River, P.Q.—is on south shore of St. Lawrence, $1\frac{1}{4}$ mile SW. by W. from Doucet landing, there is a depth of 3 feet at the mouth; between Doucet landing and Godfroy river an extensive flat stretches off shore for half a mile.

Cable—Wharf.—An electric power cable is laid under the St. Lawrence river from the upper entrance point of Godfroy river over which ships must not anchor. From the same point an overhead power cable on two steel towers, 370 feet above the river surface, crosses to the north shore of the river about 1 mile above Three Rivers front range light, the span is 4,800 feet in length, and the

minimum head room at high water 160 feet, but in centre of ship channel from 225 to 250 feet. A little inside the mouth of the river is a ferry wharf.

Beacons.—A beacon on the outer end of the wharf in line with one 554 feet back of it on the east bank of the river shows the 6 foot dredged channel from the main channel to the wharf.

The Village.—At St. Godfroy are 3 saw mills, 8 merchant stores, several factories for making fish boxes, and 2 lobster canning factories.

Exporting and importing are done by rail, owing to the lack of a deep water wharf.

Grand Entry Harbour, P.Q.—is the northernmost harbour of the Magdalen islands. The entrance, 1 cable wide, is between the western end of Coffin island and the sand bars to the westward of it; within the harbour, inside Coffin island and extending NE. to Grosse island, is a large expanse of water with depths of from 1 to 3 fathoms. A narrow channel between shifting sandy shoals, extends $1\frac{2}{10}$ miles SW. from the entrance, the least depth in which is about 12 feet at low water.

Leading Lights.—Front: On NW. extreme of sand spit running northward from west end of Coffin island, a mast, with white shed at base, shows 27 feet above high water, a red fixed light.

On concrete pier a similar mast shows 240 feet $40^{\circ} 30'$ true from front light, 37 feet above high water, a similar light.

The lights in line bearing 38° true, lead through the entrance channel.

Buoys.—The SW. end of entrance channel into Grand harbour, is marked by a red and black can buoy. The sides of the channel are marked by 4 black spar buoys, and 3 red spar buoys and 1 red barrel buoy, on the port and starboard hands respectively.

A black spar buoy marks a four feet shoal, 400 feet NE. of front leading light.

Directions.—The channel into the harbour should only be attempted with a leading wind, flood stream, and in fine weather.

Grand Entry Settlement.—There is a fishing settlement on Coffin island, some fishing wharves, and a pier with depth of 10 to 12 feet at outer end at low water—and post and telegraph offices.

SS. *R. W. Hendry*, between Pictou, N.S., and Magdalen islands, calls weekly.

Lloyd's Agent for Magdalen islands: A. J. Goudet, Amherst island.

SS. *R. W. Hendry*, between Pictou, N.S., and Magdalen islands, calls from $1\frac{1}{4}$ miles wide at its mouth, between cape West on the north and Forth point on the south, to $2\frac{3}{4}$ miles wide at its head, entered by 4 considerable streams.

Anchorage.—The best anchorage is in the SW. corner of the bay in from 7 to 30 fathoms clay—it is roomy but rather open to easterly winds.

Bagotville or St. Alphonse.—Is at the north end of the head of the bay, has a population of 3,000, and 2 piers. Lapage's pier is private and used only by small local craft; the other, the Government pier, is used by the Canada Steamship lines for passengers and freight traffic from Quebec and Montreal.

The chief export is cheese of which 4,000 boxes of 80 pounds each were exported in 1922.

There are no manufactures in the town. The town is lit with electricity, and there are two small hotels, post-office, telegraph office and a branch of the National Bank.

It is at present the terminus of the Roberval-Saguenay Railway, which connects at Ha Ha junction with the Quebec & Lake St. John Railway. There is a resident medical man. All kinds of cabin and deck supplies can be obtained.

Port Alfred.—At the centre of the head of the bay—has a population of 1,420, and a modern chemical pulp mill called the Bay Sulphite mill which gives employment to all not engaged in agriculture in the neighbourhood.

The mill has a first-class modern machine shop attached where repairs can be made to hulls and machinery of vessels.

A long wharf called Port Alfred wharf runs out east and west from the shore with a berthage of 1,100 feet alongside, and depth of 27 feet at low water springs.

St. Alexis or Grand Bay.—Is at the SW. end of the head of the bay—has a population of 2,450, and one long pier dry at low water except at the extreme end. There is a small saw mill otherwise no manufactures. It has a branch of the National bank, and telephone service; only small supplies can be obtained.

Light.—From the roof of the shed on pier head at St. Alphonse is shown a red fixed light from a height of 34 feet above high water.

Shipping.—At Port Alfred, during the fiscal year 1921-22, 63 vessels, register tonnage 98,898, entered and cleared the port.

House Harbour, P.Q.—the middle harbour of the Magdalen islands lies at the west end of Alright island with Grindstone island immediately to the westward.

The narrow entrance channel has depth of 6 feet at low water, and is liable to change in direction and depth; it lies at the head of the bay between cape Alright to the eastward and cape Meule on east side of Grindstone island to the westward, $3\frac{1}{2}$ miles apart.

Meule rocks extend $\frac{3}{4}$ of a mile seaward of cape Meule. There is a landing pier and telegraph office at House harbour.

Buoys.—A red conical fairway buoy marks the entrance of House harbour, and the channel is marked by 2 red spar buoys and 3 red conical buoys on eastern side, and 3 black spar buoys and 2 black can buoys on western side.

A black buoy marks outer end of Meule rocks. A red spar buoy is SW. of the black buoy.

Village of Grindstone.—On SE. side of Grindstone island, is peopled chiefly by Scotch farmers and Acadian fishermen; most of the freight for the Magdalen islands is unloaded here, and there is a landing pier and breakwater, also post and telegraph offices. The SS. *R. W. Hendry*, between Pictou and Magdalen islands, calls weekly.

Light.—A red fixed light is shown from a mast on outer end of Grindstone wharf.

Wireless Telegraph.—There is a wireless telegraph station on summit of Grindstone island, range 200 miles; call letters V.C.N.; open 8 a.m. to 8 p.m.

Maria Harbour, P.Q.—on north shore bay Chaleur, lies about 3 miles westward of the mouth of the Cascapedia river on the west side of Cascapedia bay. Large vessels sometimes enter the port and load lumber, at anchor in from 4 to 7 fathoms. Small vessels moor alongside the pier.

Duthie point the eastern entrance point of Cascapedia harbour is also the east point of Maria harbour, and shoal water extends for about a mile off shore from Duthie point to Indian point to the SE.

Light.—At outer end of Maria wharf, a white, square, wood tower, shows 27 feet above high water, a white fixed light.

Buoys mark the edge of the shoal ground between Duthie and Indian points.

Wharf.—At Maria is a wharf 1,342 feet long with 5 feet at low water springs at its outer end.

Port Charges.—A harbour master and usual port charges.

Village.—Maria is a large and prosperous village situated 3 miles westward of the mouth of the Cascapedia river, with railway station, post and telegraph offices. The Quebec and Oriental Railway passes through it.

Matane Harbour, P.Q.—is at the mouth of Matane river, south shore of the St. Lawrence. A bar at the entrance of the harbour with 4 feet at low water continually shifts.

Lights.—At Matane, a white cylindrical reinforced concrete tower shows from a height of 85 feet above high water, a white group flashing light.

Matane range lights.—Two beacon red fixed lights, one at outer end of Government wharf inside mouth of Matane river, the other 360 feet from the end of the wharf lead into Matane river, when in line bearing $162^{\circ} 34'$.

Wharves.—There are 3 Government wharves at Matane, one inside the harbour, and two at the entrance; the depth of water at the inside wharf is 13 feet at high and 7 feet at low water.

Buoys.—Two buoys mark the entrance to the harbour, and gas and bell buoy is moored 2 miles from land to show the point where vessels should anchor to load in from 10 to 5 fathoms, $\frac{1}{2}$ mile from shore.

Tides.—Rise 11 feet spring, 7 feet neaps—are irregular. East winds raise the water, west winds lower it.

Port Charges.—Are Harbour master's and sick mariners' dues.

Pilotage.—Pilots reside in the village, and their services can be procured.

Lloyd's Agent.—W. Russell.

Montmagny Harbour, P.Q.—is on the south side of the St. Lawrence river about $1\frac{1}{2}$ mile inside the mouth of the Riviere du Sud.

The channel from the St. Lawrence river through St. Thomas bank to the basin of the harbour is marked by buoys and is nearly dry at low water.

Only small boats, and that not until 2 hours after the rise of tide, can pass through the channel to the basin and moor at the wharves.

Wharves.—There are 2 wharves belonging to the Marine Department at Montmagny, and Price Bros. Co. Ltd., private wharf.

St. Thomas pier at west entrance of Riviere du Sud is 205 feet long with depth of 4 feet at low water at the end.

Lights.—A white open framework tower at the outer end of St. Thomas pier shows from a height of 26 feet above high water, a red fixed light.

A white framework tower, $164^{\circ} 30'$ true, 657 yards from the preceding light, shows from a height of 44 feet above high water, a red fixed light. The lights in line lead into the harbour.

Town of Montmagny.—On both banks of Riviere du Sud, at half a mile within the entrance—has a station on the Intercolonial, a church, sawmill, pulp-mill, 2 foundries and iron works, ships lumber to European markets.

Population in 1921 was 4,145.

Shipping.—During the fiscal year 1921-22, 1 vessel register tonnage 1,002 entered and cleared the port.

Montreal Harbour, P.Q.—is in latitude N. $45^{\circ}-30'-17''$, longitude W. $73^{\circ}-54'-0''$.—Montreal is the most important shipping port in Canada during the season of navigation.

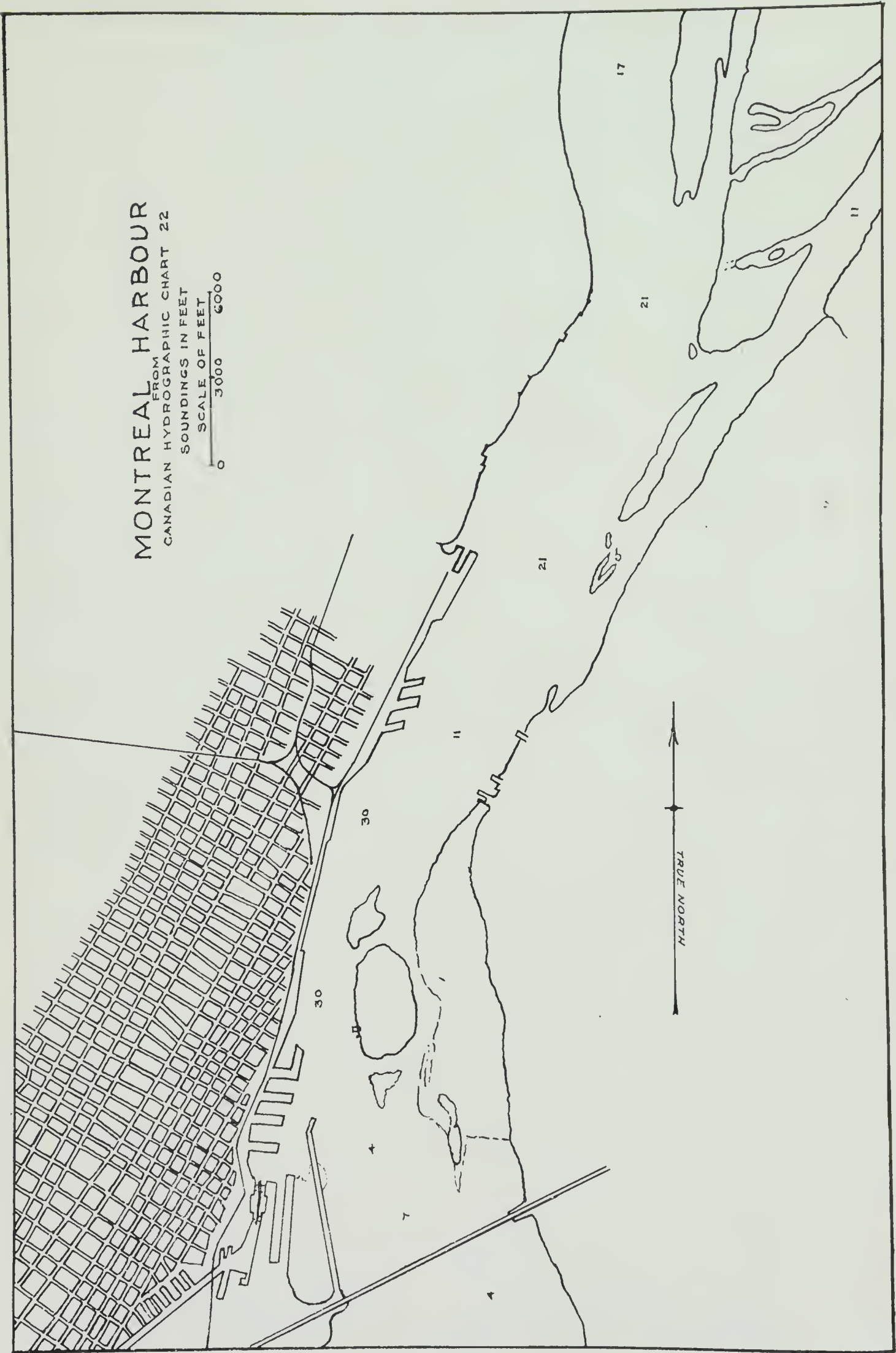
It is at the head of the St. Lawrence Ship Channel and its limits extend from a line 3,760 feet above and parallel to Victoria bridge, on the St. Lawrence river, to Bout de l'Isle the northeast point of Montreal island, a distance of about 13 sea miles as the crow flies. The island is situated on the west bank of the river, but both banks of the river in the harbour are under the control of the Commissioners for harbour purposes. The entire water front on both sides for the whole distance is harbour property.

The width of the harbour in the distance mentioned varies greatly. Opposite the city are Ile Verte, Ile Ste. Helene and Ile Ronde. The river narrows between these islands and the west bank of the river, and causes what is termed St. Mary's current, but after this current is passed, the river expands above and below the island. The main or ship channel passes on the west side of the three small islands mentioned, opposite the city.

Deep draught vessels must keep within the ship channel when approaching the wharves along the city front, but harbour and river boats find ample water to pass over the well known shoals and shallower parts of the harbour by regular channels between the islands.

The minimum width of the ship channel is 450 feet. At Longue Pointe, east of the city of Montreal, Longue Pointe shoal begins, and separates the ship channel from deep water that is found along the west bank of the river. The depth of water close to the bank is from 36 to 40 feet, and is used only by vessels which do not ascend to the piers and quays of the main harbour. Deep draught vessels passing up to the main harbour keep in the ship channel until the wharves are reached. The water over the shoal is from 6 to 22 feet and only harbour and river boats pass over this shoal, but local knowledge is necessary to navigate this part of the harbour.

Vessels navigating the great lakes and upper St. Lawrence river enter the harbour at the west end by Lachine canal and locks. At the foot of the locks



the water is 14 feet over the sill. A line of passenger steamers successfully undertake the navigation of the Lachine rapids, immediately above Montreal, downstream, making the return trip by the canal.

The harbour of Montreal has three divisions: No. 1, south of Lachine canal; No. 2, the central harbour, and No. 3, the lower division.

Sea-going or large ocean vessels pass up the river from the gulf of St. Lawrence, uninterrupted, day or night, using the dredged ship channel above Quebec, and coasting vessels and steamers from the Maritime Provinces and Lower St. Lawrence river either use the ship channel or other portions of the river where the charts indicate water of sufficient depth.

Victoria Bridge.—This railway and roadway steel structure crosses the St. Lawrence from pointe St. Charles to St. Lambert on the southeast shore, the length, from shore to shore, being 7,350 feet. It has twenty-four spans, the one nearly in the middle of the river, and through which is the steamboat channel, being nearly 350 feet in length.

Ship Channel.—The ship channel between Bout de l'Isle and Montreal, minimum width 450 feet, has been dredged to a depth of 30 feet below extreme low water of 1897.

The sides of the channel are marked by gas buoys at frequent intervals red on the starboard side, black on the port, going up stream.

St. Mary's Current is the name given to the passage 1,300 feet wide between ile Ronde and Montreal, and through which passes the bulk of the St. Lawrence river water. The depth in St. Mary's current is 30 feet, and the ordinary rate of the current is about $4\frac{1}{2}$ knots per hour.

Caution.—Should two vessels meet in St. Mary's current, the up bound vessel must stop, and allow the down bound vessel to pass.

Harbour Commission.—The Harbour is administered by a Commission consisting of 3 Commissioners appointed by Governor-in-Council, General Manager and Secretary, and Chief Engineer, who report annually to the Minister of Marine and Fisheries.

Harbour Regulations.—No vessel is allowed to take up a berth in the harbour of Montreal, excepting that assigned her by the Harbour Master.

Colours.—The colours of every ship shall be kept hoisted until a berth has been assigned her, and the "Blue Peter" is to be hoisted twenty-four hours previous to her departure.

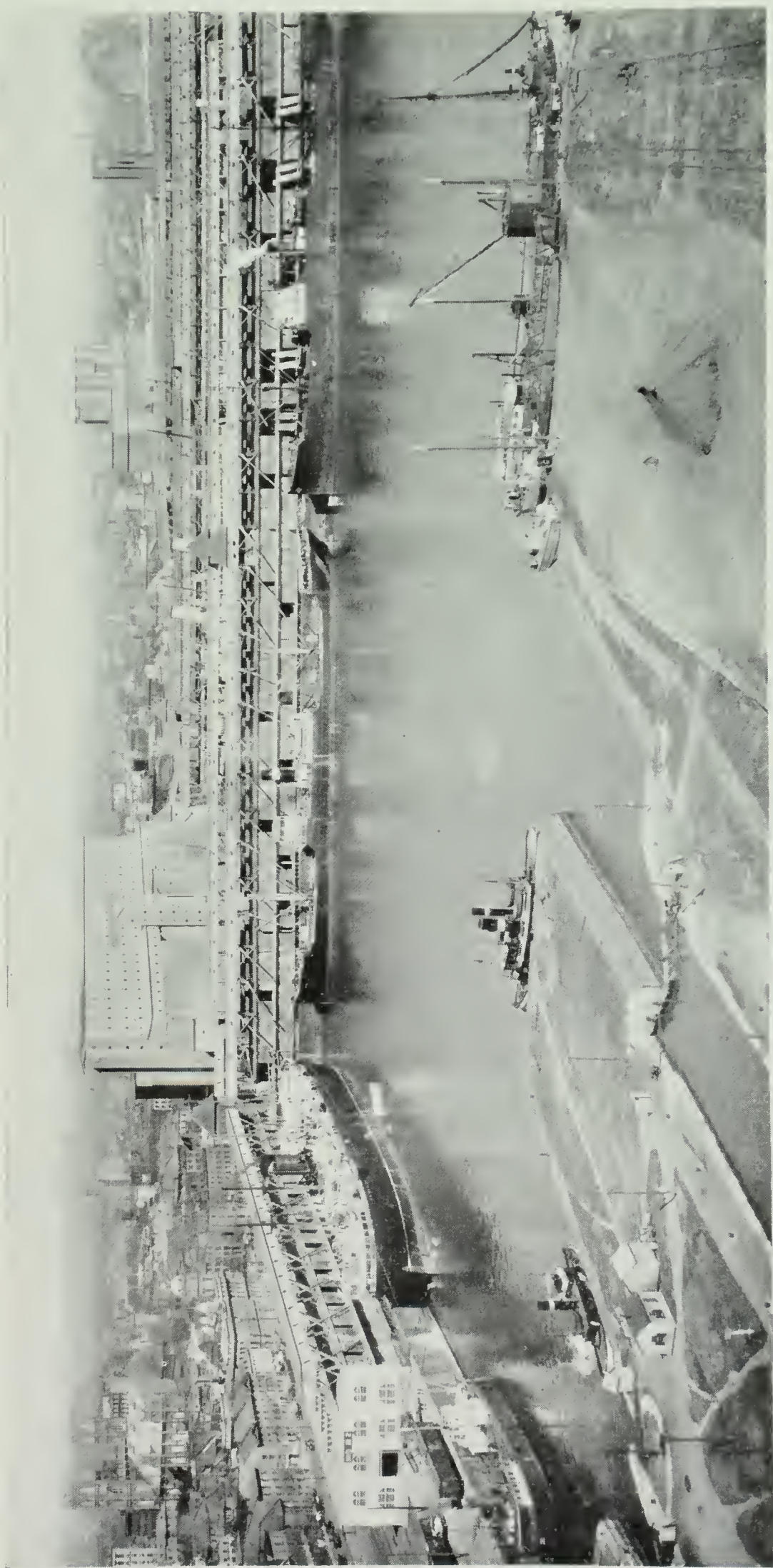
Speed.—No steam vessel while within the harbour shall move at such a rate as to cause damage or inconvenience to other craft.

Anchoring.—A vessel must not anchor in such a position as to obstruct a free passage for all other vessels to or from the harbour and to or from the entrance to Lachine canal.

Watch.—A watch is to be kept from sunset to sunrise on board all vessels in the harbour.

No rubbish, ashes, or other material is allowed to be thrown into the harbour.

Lights and Buoys, etc.—For a description of lights and buoys, and other aids to navigation from Bout de l'Isle to Montreal, and further hydrographic informa-



Montreal Harbour. View from the Grand Trunk Elevator.

tion, see 1920 Canadian “St. Lawrence Pilot (above Quebec)”, pages 102 to 108 inclusive, covering charts Nos. 2 and 1, also Department’s 1923 “List of Lights ” on Atlantic coast and Gulf of St. Lawrence to head of navigation.

Directions.—Sorel to Montreal, see 1920 Canadian “St. Lawrence Pilot (above Quebec)”, pages 115 to 118 inclusive, covering chart No. 22.

Season of Navigation.—Navigation at Montreal opens on an average about the 20th of April and closes about the middle of December.

PLACE AMONG WORLD PORTS

The United States Department of Commerce, in its Statistical Abstract for 1919, thus gives the total value of the export trade of the seven leading ports of the world:—

Port	Exports
New York.....	\$2,613,049,000
Liverpool.....	1,091,743,000
London.....	818,045,000
Hamburg.....	817,275,000
Antwerp.....	588,181,000
Montreal.....	524,365,000
Marseilles.....	304,290,000

SPECIAL FEATURES

Montreal is on the line of route, east and west, between the great north-west of the American continent and European ports.

The harbour of Montreal is at the head of ocean navigation on the St. Lawrence, and at the foot of the inland navigation of the Great Lakes.

The great transcontinental railway lines of Canada all reach ocean navigation at Montreal.

During seven months of the year the Canadian transportation system, via the harbour of Montreal, competes with the great lake and rail transportation system of the United States.

NAVIGATION DISTANCES

From	To Liverpool	To Rotterdam
	Nautical Miles	Nautical Miles
Montreal (via Belle Isle).....	2,760	3,293
Montreal (via Cabot strait).....	3,007	3,540
Quebec (via Belle Isle).....	2,625	3,158
Quebec (via Cabot strait).....	2,872	3,405
Halifax.....	2,485	2,771
St. John, N.B.....	2,692	2,978
Portland, Me.....	2,776	3,062
Boston.....	2,854	3,140
New York.....	3,036	3,322
Philadelphia.....	3,172	3,458
New Orleans.....	4,525	4,813
San Francisco (via Panama Canal).....	7,843	8,107
Vancouver (via Panama Canal).....	8,648	8,912

HARBOUR IMPROVEMENTS SINCE 1913-14 (DATE OF LAST PORT DIRECTORY)

New Victoria Pier and Market Basin.—2,454 linear feet of new berthage have been completed.

Extension of Shore Wharves, Sections 24-35.—Up to date approximately 3,000 lineal feet have been completed; in addition to these extensions, improvements include completion of basin for floating dock at Maisonneuve, construction of wharf at Pointe aux Trembles for the Canada Cement Company, construction of wharf at Montreal East for Imperial Oil Company, Limited; construction of wharf for municipality of Montreal East; extension and partial reconstruction of Jacques Cartier pier, reconstruction wharf sections, 23-24.

Railway Extensions.—From 36 miles in 1912 the harbour railway system has increased to 59 miles to-day. Principal items of improvements and extensions were: Doubling and raising main lines above flood level from Molson's creek to Racine pier; extension of high-level railway from Racine pier to Montreal East, a distance of four miles, with yards and connections to industrial plants; storage and transfer yard at Maisonneuve, storage yard at section 41-43, switching and city delivery yard at Moreau street, widening high-level railway at sections 27-30 from two to five tracks, extension of harbour tracks on Commissioners street, enlargement of railway entrance at section 12, railway connections to all new wharves and piers, numerous industrial sidings.

Dredging and Filling.—The following improvements have been carried out:—Deepening of south side of Windmill Point basin.

Widening and deepening of channel in central harbour.

Removal of shoal between St. Helen's island and Guard pier.

Widening of channel opposite St. Helen's island and Ile Ronde.

Extension of South Shore channel.

Widening of channel from section 46 to section 56.

Widening of entrance channel to floating dock basin.

Approach channel to Imperial Oil wharf, Pointe aux Trembles.

Channel approach and site for Bickerdike pier extension.

New Concrete Road, St. Lambert-Longueuil.—The new road of reinforced concrete, 24 feet in width and 3,644 feet long, was formed along the eastern boundary of the property, and deep rubble and tile drains were laid along the entire length, on both sides of the road, while ditches and field drains were carried along the roadway by concrete culverts.

Buildings.—East addition to elevator No. 1, completed in 1914, giving additional capacity of 1,500,000 bushels. West addition to elevator No. 1, completed May, 1916, giving additional capacity of 1,500,000 bushels.

Locomotive Shop, Section 42.—Reinforced concrete construction completed in 1919, 130 feet by 42 feet.

Cold Storage Warehouse and Power-House.—At foot of Beaudry street.

BERTHING ACCOMMODATION

The accommodation for ocean-going vessels is as follows:—

	Berths.
For vessels of 500 to 600 feet in length and drawing 30 feet of water and over.. . . .	46
For vessels about 400 feet long, with draught of 25-30 feet.. . . .	36
For vessels 100 to 300 feet and draught of 20 feet and under.. . . .	14
Total.. . . .	96

In addition to the accommodation for ocean-going vessels there is space for small vessels, making a total berthing space of 8¼ miles.

PIERS AND WHARVES

Excellent wharves and basins have been provided for market and passenger steamers, and also wharves specially used by ferry boats.

The main wharfage accommodation for ocean-going and vessels of all kinds is supplied by a costly and substantial line of piers, built out into the river, and quays between these piers, equally substantial, run along the shore front between the inner or shore ends of the piers. Deep draught and other vessels, therefore, berth at the outer ends and along the sides of the piers, and at the quays as well.

The extension of the line of piers and quays is yearly taking place to afford accommodation to the constantly increasing trade of Montreal harbour.

The principal piers are as follows and have at present a depth of water, at low water, as stated, which includes depth at quays along the shore as well, but they are constructed to allow for greater depths in the event of future deepenings of the Ship Channel:—

	Existing Piers Approximate Length	Extensions under Construction Approximate Length	Depth of Water at Low Water
	ft.	ft.	ft.
Alexandra Pier.....	1,000	220	30
King Edward Pier.....	1,014	246	30
Jacques Cartier Pier.....	1,070	.....	30
Marine Tower Jetty.....	832	.....	30
Victoria Pier.....	2,000	.....	30
Victoria Pier.....	1,450	.....	26
Laurier Pier.....	805	.....	25
Tarte Pier.....	930	.....	29
Sutherland Pier.....	575	.....	25



Shipping at Tarte and Laurier Piers.

SHEDS

Steel Sheds.—Upon these piers and quays are 20 steel two-storey sheds and 4 reinforced concrete sheds, single storey.

The dimensions of the steel-two-storey sheds are as follows:—

	Length		Width
	ft.	in.	ft.
Shed No. 2 on quay, sections 12 and 13.....	634	4	96
No. 3, and No. 4. on Alexandra Pier.....	507	2	96
No. 5, and No. 6, on Alexandra Pier.....	467	6	96
No. 7 and No. 9, on King Edward Pier.....	507	2	96
No. 9, on King Edward Pier.....	508	0	96
No. 10, on King Edward Pier.....	460	0	96
No. 11, on quay section 17.....	571	0	96
No. 12, on Jacques Cartier Pier.....	443	10	96
No. 13, on Jacques Cartier Pier.....	412	0	96
No. 14, on Jacques Cartier Pier.....	381	6	96
No. 15, on Jacques Cartier Pier.....	365	8	96
No. 16, on Victoria Pier.....	484	0	100
No. 17, on Victoria Pier.....	310	0	100
No. 18, on Victoria Pier.....	530	0	85
No. 19, on Victoria Pier.....	516	0	85
No. 24, on quay section 24.....	264	0	105
No. 25, on quay section 25.....	484	0	105
Single Storey Sheds:—			
No. 44, on Tarte Pier.....	400	0	86
No. 45, on Tarte Pier.....	400	0	86
No. 46, on Tarte Pier.....	400	0	86
No. 47, on Tarte Pier.....	400	0	86

Sheds Nos. 2, 5, 7, 8, 16, 17, 18, 24 and 25 contain offices, waiting rooms, lunch rooms, workshops, stores and latrines.

ELECTRIC HOISTS

Eight electrically driven hoists have been installed in the central part of the harbour, affording access to the upper floors of transit sheds—making the second storey as convenient for the reception and delivery of cargo as the ground floor. The hoists are so located that any contiguous shed can make use of the same without interference with the next shed.

Each hoist can lift to the upper deck of the sheds two loaded trucks of a total weight of 20 tons at a time. These hoists are operated day and night.

GRAIN ELEVATORS

The situation of Montreal at the head of ocean navigation affords easy and direct connection with all grain ports on the Great Lakes. Grain transported by vessels from Lake Superior ports and by railroad cars is trans-shipped for European ports at Montreal. The port is located farther inland than any other seaport on the North American continent and is at the foot of the canal system which connects the Great Lakes. These lakes being the waterway by which grain grown on the great prairies is borne to the sea, have their various inland ports on both sides of the lakes where grain is loaded into lake carriers of large tonnage and capacity. Montreal, in order to receive and trans-ship large quantities of wheat and other grain, has developed the most complete system of grain delivery into ocean-going vessels.



Montreal Harbour, Grain Elevator No. 2

The storage capacity and the unloading and elevating equipment are continually being increased to meet the demands of the grain business.

The grain handling system established includes storage capacity, elevating from cars or loading into cars, unloading lake vessels by use of marine legs, and loading by means of conveyor galleries to the ocean ships lying at their berths.

A fleet of floating grain elevators is used to relieve any threatened congestion, the latter being placed between the vessel unloading and the vessel receiving cargo. The grain is weighed while passing from one to the other.

Harbour Commissioners Grain Elevator No. 1 is the largest sea-port elevator in the world, having a storage capacity of 4,000,000 bushels.

Dimensions: 530 feet long, 128 feet wide and 202 feet high.

Harbour Commissioners' Grain Elevator No. 1 is the largest sea-port elevator 2,662,000 bushels.

Dimensions: 457 feet long, 100 feet wide, and 220 feet high.

Harbour Commissioners Elevator "B," with annex, has a storage capacity of 2,150,000 bushels.

The combined unloading effort on the above Grain Elevators is from 50,000 to 60,000 bushels per hour from ships, and about 100,000 bushels per hour from cars, while the aggregate rate of delivery is about 200,000 bushels per hour corresponding to about 100 tons per minute, and 15 vessels can be loaded simultaneously.

Two new shipping grain berths for tramp boats have just been provided by extending the existing Marine Tower Jetty at Elevator No. 2, between Jacques Cartier and Victoria piers, and continuing the conveyor gallery over same for another 410 feet. A conveyor gallery was added on the face of Elevator No. 2, then extended over the present receiving gallery, through the Marine Tower and out to the end of the extended jetty. Each berth has 8 dock spouts supplied by two conveyor belts of 20,000 bushels per hour capacity, and so arranged that, if desired, one of the adjoining berth's belts can be used on the other, making possible the working of 3 dock spouts simultaneously on one ship.

In all of these elevators, charges are made as reasonable as possible for storing, cleaning, turning, drying and inspection.

Montreal is the greatest grain exporting port in the world and its total elevator storage capacity amounts to 11,500,000 bushels.

GRAIN CONVEYER SYSTEM

The grain conveyer system is an exceptional feature of the Harbour grain handling system and is probably the most complete on the continent. These conveyor galleries extend around the wharf line from McGill street to the end of Victoria pier, covering 20 berths, but including the berths at Windmill Point basin, served by Elevator "B", there are 22 grain berths in all. The galleries are carried obliquely out from and over the roofs of the transit sheds—Nos. 2 to 19—towards the wharf line, and grain is delivered to ships from either elevator at any one of the 20 berths without the ship having to move.

The grain conveyers from the Harbour Commissioners' two elevators Nos. 1 and 2 are about 3 miles in length, operating some 15 miles of belting.



Montreal, the Metropolis of Canada.—General view of the magnificent Cold Storage Plant erected by the Harbour Commissioners of the Port of Montreal, during 1922, at a cost of \$2,500,000 and containing 4,500,000 cubic feet of storage capacity.

Portable trippers are used to deliver the grain into spouts which enter the holds of vessels lying at the piers. A special advantage of this system for vessels carrying general cargo is the despatch given to the large liners by enabling them when cargo space is ready, to load grain while unloading operations are carried on at the same time. Another special advantage to shipping gained from the conveyer system, is the facility afforded for loading several steamships lying at the different berths simultaneously.

Electric power is used for operating the above grain handling equipment.

WAREHOUSE AND COLD STORAGE PLANT

The Harbour Commissioners have just completed a large modern warehouse, centrally located with regard to the harbour, the city and railway terminals.

This warehouse is 440 feet long, 110 feet wide and 10 storeys high. It is situated adjoining a dock where any ocean liner reaching Montreal may berth. Ten refrigerator cars may be switched into the house adjoining the trucking platform; ten others may be loaded or unloaded from a track just outside the warehouse. Motor trucks or teams to the number of thirty, all under cover within the walls of the building, may handle goods directly at the trucking platforms.

The storage capacity of the entire plant amounts to 4,628,000 cubic feet.

The warehouse is built of massive reinforced concrete with brick curtain walls of the most modern up-to-date design. Every known modern convenience for efficiency and excellence has been provided.

An air conditioning plant has been installed for use in each of the cold rooms.

Four water towers are located on top of the building for the Automatic Sprinkler system.

An artesian well, 1,100 feet deep, was bored which furnished water of excellent quality of a temperature of 42° in summer and is one of the features of the plant.

An ice-making machine is also a feature of the equipment.

1,500,000 cubic feet of dry storage and 450,000 cubic feet of natural cool storage are also provided in this building.

The building is equipped with four freight elevators, each of 13,000 lbs. capacity, and one passenger elevator of 2,000 lbs. capacity.

Four mechanical platform conveyors with gravity or belt connection to or from the ocean vessels are being designed.

A car puller for drawing railroad cars through the building in either direction has been provided.

Nine compartments, each connecting directly with the main corridor, which is 280 feet long and 20 feet wide, are provided on each cold storage floor, with 25° F., suitable for general merchandise; 10° to 14° F. suitable for butter, fish and poultry; 5° to 15° F. suitable for meats.

A sharp freezing room at 5° has been specially provided for fish.

The Power House and Mechanical equipment is situated 50 feet distant from the warehouse, in a separate massive reinforced concrete and brick building

having three fire walls. All important machinery, compressors, etc., are in duplicate so that in case of accident to one half of the plant, the other half will be sufficient to carry on the whole of the requirements.

HARBOUR RAILWAY TERMINALS

The Harbour Commissioners have under their jurisdiction, and operate, a well equipped freight handling railway system. This system includes high and low level tracks, sidings, diamond crossings, convenient switches, cars, locomotives, and engine house and shops. The general freight transportation business along the harbour front, as well as coal delivery by railway lines, is conducted upon the harbour railway.

The system is connected with every railway that enters or terminates at Montreal. Freight cars belonging to one railway line or another are drawn to the railway yards or points of freight delivery by the Harbour Commissioners' locomotives.

The high and low level tracks are connected, and tracks have been laid to the different piers and sheds for the purpose of warehousing and loading and unloading vessels. This traffic arrangement is conducted by a separate department of the Harbour Commission, and the extension, maintenance and operation are among the many improvements constantly being introduced. The success of this harbour method is realized by shipping and the many commercial and manufacturing interests concerned in trade with the Port of Montreal.

For this transportation adjunct to the freight handling facilities of the harbour, over 60 miles of track have been laid.

The charges for moving cars are collected under a tariff regulation adopted by the Commission and materially add to the revenue of the harbour.

The electrification of the railway system is presently in progress, and the eastern section, from Victoria pier to Montreal East, is ready for operation. One-third of the Power House mentioned under the heading "Warehouse and Cold Storage Plant," has been retained for the equipment necessary for the operation of this Electrical Railway System.

SHIPBUILDING

The Canadian Vickers, Ltd., plant at Maisonneuve comprises:—

Floating Dock and Ship Repairing.—Consisting of a 25,000 ton floating dock operated in two sections, and complete workshops adjoining for carrying out the heaviest repairs to either ships' engines or boilers.

Shipbuilding Plant.—Consisting of five (5) shipbuilding berths with all the necessary workshops adjoining, but due to the great depressions in the shipbuilding industry, a portion of the shipbuilding plant has been re-organized to comprise the following departments:—

Aeroplane Construction.—One workshop is now appropriated practically entirely for the manufacture of aeroplanes and their accessories, and a contract for the Canadian Government is already in hand for six (6) Vickers' "Viking" Amphibians.

Industrial Engineering.—The machine shop is now largely appropriated to Industrial Engineering, comprising all classes of Mining and Industrial machinery, such as mine cars, skips and cages, ball and tube mills, stone crushers, elevators, boilers, hoisting engines, etc.

Structural Steel Department.—Another alteration in the shipbuilding department has consisted of the appropriation of a portion of the workshops for the fabrication of structural steel, and in this connection the contract for the fabrication and erection of the structural steel for the new grain elevator in the Port of Montreal has been awarded to the company.

It will thus be seen that, while the ship-repairing portion of the Company's activities will be maintained with a maximum capacity, their activities will also be very much enlarged shortly in other industrial fields.

At present the number of hands employed is about one thousand (1,000).

FLOATING AND DRY DOCKS

Two small dry docks are located at the foot of the Lachine canal where vessels of 400 feet long and 10 feet draught are repaired.

The new floating dock is one of the largest of its kind in Canada, having a length of 600 feet clear, width 135 feet, docking draught 30 feet, and lifting capacity of 25,000 tons.

The floating dock is situated in the eastern section of the harbour below St. Mary's current at a point where the gentle current presents no difficulty in handling vessels. The site of the dock is in a natural bay of considerable extent. The dock is the property of the Canadian Vickers Ltd., and the Harbour Commissioners have appropriated the protected basin and done the necessary dredging for entering the dock, supplying deep water as well as furnishing 30 acres of made land for a shipyard and repair plant. The three inner walls of the basin have been built very substantially and are founded 32 feet below extreme low water, and improved concrete quay walls erected up to 28 feet above low water.

All the work of quay structure, dredging the basin or bay, filling of the remaining portion of the 30-acre site was done and will be maintained by the up-to-date construction and dredging plant of the Harbour Commissioners, with the occasional assistance of dredging plant of the Marine and Fisheries Department.

The railway system of the Harbour Commissioners connects the shipyard with other sections of the harbour and the various railway terminals of the city.

FLOATING PLANT, ETC.

The Harbour Commissioners operate a very complete dredging fleet comprising dredges, derricks, drilling and blasting boats, dump and flat scows, tugs; a 75-ton floating crane; locomotive cranes, etc.

Tugs for moving vessels or other craft are available in the harbour.

The 75-ton floating crane is extensively used by all steamship lines for handling heavy package freight, a very reasonable tariff being in force for the use of this facility.

HARBOUR POLICE

Organized in 1913 the harbour police force during the summer season comprised 1 chief, 3 captains, and 50 constables, who regulate the traffic on the wharves, maintain order, and protect life and property within the harbour.

Thirty-two of these constables were continuously at the disposal of the various shipping companies during the summer for special service in protecting cargoes.

For the winter season the force consists of four officers, twenty constables, and one fireman.

During the season 1922, 127 passenger ships docked, bringing 30,890 passengers, and the same number of ships sailed with 36,518 passengers. 64,430 passengers arrived and 17,045 sailed on Canada Steamship Line boats, making a grand total of 148,793 passengers handled during the season.

Four men were saved from drowning by Harbour Police, and first aid was rendered to 16 persons.

During the year 38 arrests were made on the wharves.

16,220 carters, loading from isolated places on the wharf, were checked by the traffic constables.

13,138 taxicabs and cabs were regulated coming on and leaving the wharves during the season.

GENERAL

The Harbour Commissioners maintain fire and life saving apparatus which render valuable service.

The permanent staff consists of experienced engineers and officials, under a General Manager, who is personally responsible to the Harbour Commissioners, for the efficiency of such staff and the successful operation of the harbour.

MARINE SIGNAL SERVICE

The government has established the following signal stations on the shores of the St. Lawrence river above Quebec, connected with each other by telephone:—

On the northwest shore:—Quebec, Grondines, pointe Citrouille, Three Rivers, Longue pointe and Montreal are day and night stations; Portneuf is a day station only. On the southeast shore, pointe Nicholas, Deschaillons, Sorel, Bellmouth and cap St. Michel are day and night stations; Bridge is a day station only.

Communication between the ship and the above stations and vice versa is, in the day time, made by means of flags of the international signal code; at night, by means of two lights, red or white.

Printed copies of these signals, subject to yearly revision, can be obtained, at a nominal price, from the Signal Service office in Quebec, and Reporting Station, Montreal.

In addition to these established printed signals, private messages can be sent by the international code to and from ships, the charge, in the latter case, being collected at the telegraph stations nearest to destination.

Vessels bound to and from the minor ports of the river St. Lawrence are particularly requested to show their official numbers whenever possible.

The stations from Quebec to Montreal are connected by a private telephone line rented from the Bell Telephone Company.

Montreal is not a signal station, but an office for distributing shipping news.

REPORTING STATION

In La Sauvegarde Building, 92 Notre Dame street east, is a Marine Department Reporting Station for receiving complaints from and passing out information, day and night, to vessels in the harbour and vicinity.

Repairs.—The principal repairing firms in Montreal, for vessels and engines, are the Canadian Vickers, Ltd., Garth Company, Hall Engineering Company, Lymburner Company, Ltd., A. Cantin, Messrs. J. and R. Weir and Fraser, Brace and Company.

Wireless Telegraph.—A wireless telegraph station is established at Montreal, the mast being erected on Tarte pier.

Time Signal.—A time signal is made from a mast erected on the tower of the Harbour Commissioners' office, daily, except on Sunday. The ball is hoisted to the mast head at 11h. 55m. a.m., and dropped by electric signal from McGill university, at noon.

Consuls.—There are Consuls, or Consular Agents, resident in Montreal, for all the principal maritime nations.

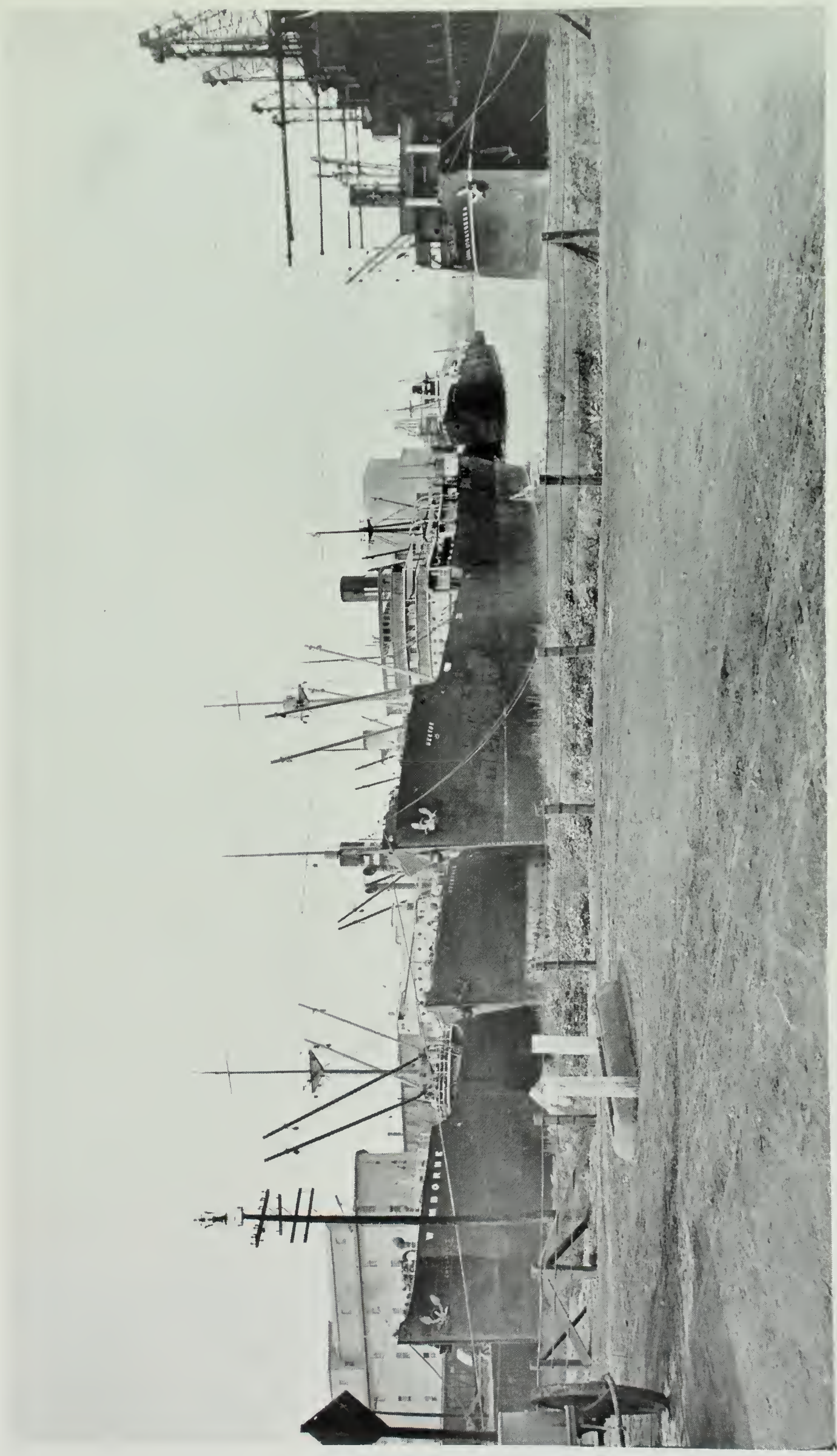
Sailors' Homes.—The Montreal "Sailors' Institute" is situated opposite the Custom house, the "Catholic Sailors' Club" at the corner of St. Peter and Common streets. Sick seamen are sent, either to the "General" or to "Notre Dame" hospital.

Coal.—Coal discharging plants are operated in different parts of the harbour. The Dominion Coal Company's equipment consists of extensive steel and wooden towers at Hochelaga and at Windmill point with large buckets which unload from 200 to 400 tons per hour and storage pockets with large capacity form part of the equipment. The Intercolonial Coal Company, the Inverness Coal Company, the Port Hastings Coal Company, the Nova Scotia Coal and Steel Company and the Acadia Coal Company have each discharging plants of considerable capacity.

Different methods are employed, the principal being by docking alongside coal wharves where chutes are used for bunkering, vessels are also boomed out from quays and coaled from scows. General coaling is done from coal barges using derricks. One passenger line coals its steamer by mechanical plant from scows, and occasionally coal is delivered on board from railway cars.

Water for drinking purposes can be had free of charge from the fountains on the various piers.

Port Charges.—Sick mariners' dues are collected under the Federal Act as in other sea-ports of the Dominion and are 2 cents per registered ton of vessels, paid by sea-going vessels only three times in one year. Harbour dues consist of wharfage on cargo shipped or landed according to a tariff of tolls



Windmill Point basin, showing grain cargo vessels, three abreast in a line of 2,000 feet, fitting out to receive grain.

No wharfage is charged on hulls of vessels at the Harbour Commissioners' wharves nor tonnage dues for lights and buoys.

PILOTAGE

Pilotage on the St. Lawrence river below Montreal is regulated under a special Act of Parliament administered by the Minister of Marine and Fisheries.
The rates are:—

QUEBEC TO PORTNEUF

From the harbour of Quebec to Portneuf and the opposite side of the river St. Lawrence, or below Portneuf and above the harbour of Quebec: For the pilotage of any vessel in tow, or propelled by steam (except as hereinafter mentioned) for each foot of draught of water—

Upwards..	\$ 0 50
Downwards..	0 50

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water—

Upwards..	\$ 0 62½
Downwards..	0 62½

For the pilotage of any sea-going vessel propelled by steam, for each foot draught of water—

Upwards..	\$ 0 75
Downwards..	0 75

For the pilotage of any vessel under sail, for each foot of draught of water—

Upwards..	\$ 1 05
Downwards..	0 70

QUEBEC TO THREE RIVERS

From the harbour of Quebec to Three Rivers and the opposite side of the river St. Lawrence, or any place above Portneuf and below Three Rivers.

For the pilotage of any vessel in tow or propelled by steam (except as hereinafter mentioned) for each foot of draught of water—

Upwards..	\$ 1 50
Downwards..	1 50

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water—

Upwards..	\$ 1 75
Downwards..	1 75

For the pilotage of any sea-going vessel, propelled by steam, for each foot of draught of water—

Upwards..	\$ 2 10
Downwards..	2 10

For the pilotage of any vessel under sail, for each foot of draught of water—

Upwards..	\$ 2 60
Downwards	1 90

QUEBEC TO SOREL

From the harbour of Quebec to Sorel and the opposite side of the river St. Lawrence, or any place above Three Rivers and below Sorel.

For the pilotage of any vessel in tow or propelled by steam (except as hereinafter mentioned), for each foot of draught of water—

Upwards..	\$ 1 50
Downwards..	1 50

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..\$ 1 87
Downwards..	1 87

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..\$ 2 25
Downwards..	2 25

For the pilotage of any vessel under sail, for each foot of draught of water—

Upwards.. . . . .	..\$ 3 15
Downwards..	2 10

QUEBEC TO MONTREAL

From the harbour of Quebec to the harbour of Montreal or to any place above Sorel and below the harbour of Montreal.

For the pilotage of any vessel in tow or propelled by steam (except as hereinafter mentioned), for each foot of draught of water—

Upwards.. . . . .	..\$ 2 00
Downwards..	2 00

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..Inland \$3 25, Coasting.. . . \$ 3 50
Downwards.. . . . .	..Inland \$3 25, Coasting.. . . \$ 3 50

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..\$ 4 00
Downwards..	4 00

For the pilotage of any vessel under sail, for each foot of draught of water—

Upwards.. . . . .	..\$ 4 20
Downwards..	2 80

MONTREAL TO SOREL

From the harbour of Montreal to Sorel or to any place above Sorel, and from Sorel or any place above Sorel to the harbour of Montreal.

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..\$ 1 00
Downwards..	1 00

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water—

Upwards.. . . . .	..\$ 1 20
Downwards..	1 20

MINIMUM TARIFF

For the pilotage of any vessel subject to pilotage, between the harbour of Montreal and the harbour of Quebec, and vice versa, or between any intermediate ports, a minimum fee shall be charged of.. \$ 20 00

For the movage of any ship from Lachine canal to Victoria pier or any place within that limit, or vice versa.. 5 00

For the movage of any inland or lake vessel from Lachine canal, to Section 50, or vice versa.. 5 00

For the movage of any inland or lake vessel from Section 50 to the Eastern limit of the harbour, or vice versa.. 10 00

For the moving of any sea-going ship from any place in the harbour above Victoria pier to Section 50, or vice versa..	10 00
For the movage of any sea-going ship from any place above Section 50 to Vickers dry dock, or vice versa..	15 00
For the movage of any sea-going ship from any place above Section 50 to the Eastern limits of the harbour, or vice versa..	20 00

The Department impresses upon every pilot the absolute necessity of waiting above each of the bars mentioned in the Tide Tables for such rise of tide as will carry his vessel safely over.

Officers of vessels will, on application at the Pilotage Office, 1 Common street west, Montreal, be furnished with the By-Laws regulating the harbour, the river and any other special information they may desire. Here may be purchased charts of the Ship Channel from Montreal to Quebec.

The Pilotage Offices at Montreal and Quebec are open day and night.

The pilotage steamer *Jalobert* cruises off Father point for vessels requiring pilots to Quebec, and at Quebec vessels signal for a pilot to proceed to Montreal. By the telegraph system in the St. Lawrence route, masters telegraph ahead to Quebec for a pilot to continue to Montreal.

OVERSEAS STEAMSHIP LINES TRADING FROM MONTREAL WITH THEIR AGENTS AND ROUTES

Agents		Route
Anchor-Donaldson Line.....	R. Reford Co., Ltd.....	Glasgow
Cunard Line.....	R. Reford Co., Ltd.....	London
Cairn-Thomson Line.....	R. Reford Co., Ltd.....	Leith & Newcastle
Can. Pacific Ocean Services.....	C.P.O.S.....	Glasgow, Liverpool, Bristol, London, Antwerp, Norway
Canada Steamship Lines.....	Canada SS. Lines.....	Havre
Can. Government Merchant Marine	Can. Government Merchant Marine	West Indies and South American ports, also European ports
Elder Dempster Co., Ltd.....	Elder Dempster Co.....	South Africa and Australia
France and Canada SS. Lines...	France and Canada SS. Lines..	Bordeaux and Havre
Furness Withy Co.....	Furness Withy Co.....	Manchester, Bristol, Liverpool, London and Antwerp
Gulf St. Lawrence Shipping and Trading Co.	Gulf St. Lawrence Shipping and Trading Co.	New Foundland and Lower St. Lawrence ports
Head Line.....	McLean Kennedy Co.....	Dublin, Belfast and Bristol
Houston Line.....	McLean Kennedy Co.....	South American ports
Hudson Bay Co.....	Hudson Bay Co.....	Labrador and French ports
Imperial Oil Co.....	Imperial Oil Co.....	Texas and Mexican ports
Marine Navigation Co.....	Marine Navigation Co.....	Havre
New Zealand Shipping Co.....	New Zealand Shipping Co.....	New Zealand ports
T. R. McCarthy (Tramp steamers)		Continental and British ports
White Star-Dominion Line.....	White Star Line.....	Liverpool and Bristol

COASTWISE STEAMSHIP LINES TRADING FROM MONTREAL WITH THEIR ROUTES

Kirkwood Steamship Line.....	Lower St. Lawrence
Nova Scotia Coal Co.....	North Sydney
Dominion Coal Co.....	Sydney, C.B., Louisburg, N.S.

NUMBER, NATIONALITIES AND TONNAGE OF SEA-GOING VESSELS ENTERING
THE PORT DURING SEASON OF 1921

Nationality	Number of Vessels	Tonnage
British.....	745	2,294,846
American.....	48	164,814
Italian.....	27	78,175
Norwegian.....	84	206,153
French.....	12	39,887
Greek.....	2	5,249
Dutch.....	24	55,914
Spanish.....	1	2,563
Danish.....	10	17,776
Finnish.....	1	2,437
Icelandic.....	1	428
Swedish.....	7	10,101
Jugo Slav.....	2	4,613
	964	2,891,956

Communication.—By railway, with all parts of Canada and the United States.

By water; in addition to numerous sea-going lines, there is weekly communication with Kingston, Toronto, and Hamilton (and several places between) by the "Hamilton, Bay of Quinte and Montreal" line. Steamers of the "Toronto Montreal" line run daily from June to September, calling at Toronto, Charlotte (U.S.) and Kingston, Alexandria bay, Prescott and Cornwall, both lines being branches of the "Canada Steamship Lines." Boats of the "Montreal, Laprairie" line run daily to Laprairie from Victoria pier.

The "Canada Steamship Lines" also run daily steamboats to Quebec, calling at Sorel, Three Rivers and Batiscan. This company has also several branch lines, affording frequent connection with Sorel, Three Rivers and the principal places between.

Steam vessels of the "Gaspé," "Quebec," and "Black Diamond" lines run to Gaspe, the southern and northern gulf ports, Charlottetown, Pictou, Sydney, and St. Johns, Newfoundland.

City of Montreal, Hochelaga Co. The chief commercial city of Canada and centre of the various railway systems, is built on the south east side of Montreal island between the river and slopes of Mount Royal. The lower portion of the city comprises the commercial part, the upper the residential part. Contains a large number of fine churches, hospitals, and public buildings, and is the seat of McGill and Montreal (formerly Laval) universities, the population is cosmopolitan, but French Canadians predominate.

In 1920 Montreal had 2,823 industrial establishments, employing 113,078 hands, value of products \$593,881,752.

Population in 1921 was 618,056.

Trade.—For the fiscal year 1921-22 value of imports \$167,812,273; of exports \$158,518,544.

Shipping.—During the fiscal year 1921-22, 5,607 vessels register tonnage 5,576,495 entered the port; 5,818 vessels register tonnage 5,805,354 cleared.

Lloyd's Agent.—R. J. Dale, 17 Coristine Building.

Lloyd's Surveyor.—W. J. Alderson, Lake of the Woods Building.

Chief Surveyor, Salvage Association, London.—T. C. Warkman, Coristine Building.

Murray Bay or Malbaie Harbour—north shore St. Lawrence river, lies between Cap a l'Aigle on the NE. and Pointe au Pic on the SW. The bay is 1 mile deep but filled with a flat which dries from 3 to 10 feet at low water, with exception of the channel discharge from Murray river at head of the bay. Small vessels can carry from 10 to 12 feet at high water to head of bay. A large saw mill is on the north shore of the bay at the mouth of the river.

Lights.—A mast on pier at Cap a l'Aigle shows from a height of 38 feet above high water, a white fixed light. On roof of freight shed on Murray Bay pier, a white fixed light is shown 36 feet above high water.

Buoy.—A red conical buoy marks the edge of the shoal off Pointe au Pic.

Directions.—See 1916 Canadian "St. Lawrence Pilot below Quebec," page 83; covering chart No. 201.

Tides.—Springs rise 17 feet, neaps 12 feet.

Piers.—A pier known as Murray Bay pier extends from the shore near pointe au Pic, with depth at lowest tide of 15 feet at its end, and along east side for a distance of 225 feet.

Port Charges.—A harbour master and usual port charges.

Communication.—Postal and telegraph. Is a station on Quebec and Saguenay branch of Quebec division of Canadian National Railways. Saguenay line between Quebec and Chicoutimi calls from two to six times a week.

Village of Murray Bay.—Is built on both sides of the Murray river and extends on west side of the harbour as far as Pointe au Pic—is a popular summer resort, with a number of summer hotels—the Manoir Richelieu at Pointe au Pic being the most conspicuous. St. Etienne church is another conspicuous object. On the river are grist and saw mills. Apart from summer visitors—population about 1,400.

Shipping.—During the fiscal year 1921-22, there entered and cleared from Pointe au Pic 28 vessels register tonnage 44,360.

New Carlisle, P.Q.—is on north shore of Chaleur bay inside and about $\frac{1}{2}$ mile N.E. of Carlisle point, depth of water entering the bay is 8 fathoms, and there is good anchorage in about 7 fathoms, mud S.E. of New Carlisle pier.

Light.—On outer end of New Carlisle pier, a mast shows a red fixed light, 32 feet above high water.

Pier.—A pier about 700 feet long, with 2 freight sheds on it, extends off shore about 6 cables N.E. of Carlisle point, depth of water at outer end 16 feet at low water.

Port Charges.—Harbour master's and sick mariners dues, as regulated by Canada Shipping Act, Chapter 113.

Town of New Carlisle.—Is built on ridge behind Carlisle point, and is the shire town of Bonaventure Co., has court house, post and telegraph offices; is a terminus of the Quebec Oriental road, New Carlisle to Matapedia, and also of the Atlantic, Quebec and Western Railway, New Carlisle to Gaspé.

New Richmond, P.Q.—is on north shore of Chaleur bay between Duthie point N.W. and the mouth of the Little Cascapedia river S.E. which flows into Cascapedia bay.

Black point, the eastern entrance point of Cascapedia bay is bold and rocky and 400 feet above the sea.

The channel to New Richmond harbour is from 7 fathoms depth gradually shoaling to 2 fathoms and less. Timber vessels lie at anchor outside and load from barges.

Anchorage is S.W. of Duthie point in from 3 to 5 fathoms at low water, but these depths are reported to be from 1 to 2 fathoms less than those charted. The anchorage should accordingly be approached with caution.

Tides.—Rise $7\frac{1}{2}$ feet springs, $4\frac{1}{2}$ feet neaps.

Buoys.—A black buoy in 3 fathoms is moored $1\frac{1}{4}$ miles, 212° true, from Duthie point, a red can buoy moored $\frac{3}{4}$ of a mile further south marks edge of foul ground west of Indian point, south entrance point of Little Cascapedia river.

A black wooden barrel buoy is moored in 2 fathoms off New Richmond wharf.

Lights.—One on a mast on outer end of New Richmond wharf, red fixed and one from a white square wood tower at outer end of Maria wharf, white fixed.

Port Charges.—A harbour master and usual port charges.

Supplies.—Meats, vegetables, and all kinds of groceries are obtainable at New Richmond and Maria.

The Village has a church, a mill (Montgomerys), railway station, post office and wharf, the head of which is nearly dry at low water springs. Is a station on Quebec Oriental road. Opposite New Richmond on the west side of Cascapedia bay is the village of Maria, which has post and telegraph offices, railway station, and pier 1,342 feet long with 5 feet at low water springs at outer ends.

Paspebiac Harbour, P.Q.—lies on north shore of bay Chaleur and east end of Paspebiac bay, whose west and east points are Carlisle point and Paspebiac point respectively. Paspebiac point of sand and shingle enclosing a lagoon, extends in a southerly direction 1 mile from the mainland, protecting the harbour from the eastward, and there is good anchorage in the N.E. end of Paspebiac bay in 6 fathoms, clay, about 12 cables westward of Paspebiac point.

A spit with least depth of $1\frac{1}{2}$ fathoms on it extends S.W. from Paspebiac point for 9 cables.

Light on Paspebiac point, a red square steel skeleton tower, topped by white wood watchroom, shows from a height of 65 feet above high water, a white with red sector, fixed group flashing light. A hand fog horn is operated in connection with light.

Buoy.—A red buoy marks west side of Paspebiac spit.

Wharves.—There are 2 wharves in the harbour; the southern-most one, the government wharf, is 450 feet long with 16 feet at low water springs, at its outer end.

North of government wharf is the fish wharf of Messrs. Robin & Co.

Port Charges are harbour masters' and sick mariners' dues, according to regulations.

Supplies—Water.—Ships' supplies in small quantity are obtainable, and water from a stream, immediately west of Paspebiac point.

Storm Signals are shown at Paspebiac.

Communication.—Postal and telegraph, and a station on the Atlantic, Quebec, and Western road from New Carlisle to Gaspé.

Clark SS. Co. Ltd., from Montreal to Gaspé, calls fortnightly.

Village of Paspebiac.—Paspebiac village along N.E. shore of harbour is a large fishing settlement; on the west side of Paspebiac point are the wharves and stores of Messrs. Robin & Co. and Mr. LeBoutillier's establishments, and fishermen's huts. There are two churches, English and Roman Catholic, and the settlement extends in a straggling fashion nearly to New Carlisle at the west point of the bay.

Trade.—For the fiscal year 1921-22, value of exports was \$147,762; of imports \$24,138.

Shipping.—During the fiscal year 1921-22, 141 vessels, register tonnage 19,418, entered and cleared the port.

Lloyd's Agent.—J. C. Le Quesne.

Perce Harbour, P.Q.—on east side of Gaspé peninsula, about 2 miles NW. of Bonaventure island, 400 feet high, lies between Perce rock on the N.E. and White head on the S.W. about $1\frac{1}{2}$ miles apart. Half a mile S.W. of Perce rock, Perce reef extends off shore for 4 cables dividing the harbour into the north and south beaches. The depth of water in the mouth of the south bay is 7 to 9 fathoms, with 3 to 5 fathoms, close to the shore.

Lights.—On White head, a white, octagonal reinforced concrete tower shows 154 feet above high water, a white, fixed, group flashing light. Hand fog horn connected with light.

On Laurier wharf on north beach a mast shows from 25 feet above high water, a red fixed light.

Buoys.—A black can buoy off south beach, and a red can buoy off north beach, mark the outside limits of fishing nets, and vessels should not go inside them.

Tides.—Springs rise 5 feet, neaps 3 feet. The regular flood and ebb stream between Bonaventure island and the mainland has a rate of about one knot.

Piers.—There is a landing pier on south beach, and Laurier's wharf on north beach is 670 feet long with 13 feet depth at outer end at low water.

Storm Signals are shown at Perce.

Port Charges.—Harbour master's and sick mariners' dues as regulated by Canada Shipping Act, chap. 113.

Communication.—Postal and telegraph.—Is a station on Atlantic, Quebec and Western Railway, New Carlisle to Gaspé.

Clark S.S. Co. Ltd. from Montreal to Gaspé and Bay Chaleur and P.E.I. ports calls fortnightly.

Town of Percé.—Is built on the shores of the bay and immediately behind it Percé mountain (La Table roulante) rises to a height of 1,230 feet above sea level; there is a church. Population about 1,800, chiefly fishermen.

Trade.—Value of imports for fiscal year 1921-22, \$40,500; value of exports not given.

Shipping.—During the fiscal year 1921-22, 2 vessels register tonnage 84 entered and cleared the port.

Port Daniel Harbour, P.Q.—north shore of bay Chaleur—is entered between Pillar point to the N.E. and West point to the S.W. about $1\frac{1}{2}$ miles apart. The harbour open to the eastward is about $1\frac{1}{2}$ miles deep. A small river enters the harbour at White point (locally Cap a l'Enfer) about 6 cables westward of Pillar point. A shoal runs round the shore of the harbour extending half a mile from the shore from West point to White point.

Anchorage.—The best anchorage in Port Daniel harbour is between White and West points in 6 to 7 fathoms, mud and clay.

Lights.—On West point a white octagonal reinforced concrete tower shows 100 feet above high water, a white fixed light. Hand fog horn in connection with light. On outer end of Government wharf, a white, square, wood tower shows 31 feet above high water, a red fixed light. Hand fog horn attached to light.

Wharf.—At White point is a wharf 600 feet long with 7 feet at outer end at low water, springs.

Supplies of wood and water are obtainable at Port Daniel but ship's provisions are not to be had in any quantity.

Port charges.—Are harbour master's and sick mariners' dues.

Settlement of Port Daniel.—Is at the mouth of the river near White point, there are two sawmills, telegraph and post offices, a station of the Quebec and Oriental Railway, and a number of stores.

Quebec City and Levis, P.Q.—the capital of the province of that name, had in 1921, a population of 110,500. The city consists of Upper and Lower town, the former being beautifully situated upon the ridge dividing the rivers St. Lawrence and St. Charles. Lower town, as its name indicates, is built on the low land northeast and northwest of Upper town, and embraces the parishes of St. Roch and St. Sauveur.

In Lower town are the chief banks and warehouses. The citadel, 340 feet above high water, occupies the highest part of the city, the other prominent features seen in approaching from the northeast being Laval University, Post Office, Basilica, Parliament Building, Chateau Frontenac and St. John Church.



The Custom house, a stone building with dome and flag-staff, is situated 200 yards S.W. from the entrance to Princess Louise tidal basin. The Harbour Commissioners stone building with flag-staff is situated about 100 yards west from Princess Louise tidal basin, dock wall. In 1920 Quebec had 443 industrial establishments, employing 11,422 hands value of products \$45,121,279.

Harbour Commission.—The Harbour is controlled by a Commission consisting of 3 Commissioners appointed by Governor in Council, Secretary and Chief Engineer, who report annually to the Minister of Marine and Fisheries.

Caution.—Circumstances may arise in which it may be necessary to forbid entry into Quebec harbour. When this is the case, it will be indicated by the exhibition of three red balls vertically by day, and three red lights by night. Pilots will be informed of the regulations to be followed.

Range Lights.—*Front Light* near the northeast corner of Princess Louise tidal basin, is erected a white skeleton tower surmounted by an iron box painted red. From this tower, at a height of 80 feet above high water, is exhibited a fixed red electric light, visible 4 miles.

Back Light.—The back light, exhibited from a pole surmounted by a grey iron box containing the light, is situated on the east side of the ramparts at the foot of Ste. Famille street. It is 979 yards S. 65° W. from the front light and at a height of 130 feet, shows a fixed red electric light, which should be visible for a distance of 5 miles.

These lights in line lead between Pointe-Lévis shoal and Beauport bank. They show for a small arc on either side of the range.

Anchorage may be had between Quebec and Lévis in 12 to 15 fathoms, mud bottom, with the exception of the space where telegraph, telephone and electric light cables are laid. The northeast limit of this prohibited area, is the line joining the south corners of Crawford and Barras wharves; the southwest boundary being a line drawn from the middle of National Transcontinental railway station to the northwest corner of Simpson wharf. This space is indicated in the daytime by sign boards, and at night by red lights.

Ferry.—Steamboats ply at frequent intervals between Quebec and Lévis, summer and winter.

Port Charges are harbour masters' dues, paid to the Harbour Commissioners on vessels and cargo using their wharves and docks. Moorage is also charged at Quebec on vessels and wharfage on cargo, a reduction being made in moorage, if a full cargo is not shipped in the port. Sick mariners' dues are paid three times in the year, when not paid elsewhere. Port Warden's charges are made for surveys of cargo and vessels when required. A salvage plant, subsidized by the Department of Marine and Fisheries, is maintained at Quebec.

Pilotage is under the control of the Minister of Marine and Fisheries, and the rates are:—

FOR THE HARBOUR OF QUEBEC AND BELOW, FOR EACH FOOT OF DRAUGHT WATER

From	To	From May 1 to Nov. 10	From Nov. 10 to Nov. 19	From Nov. 19 to Mar. 1	From Mar. 1 to May 1
Father Point.....	Quebec.....	\$3.87 per ft.	\$4.95 per ft.	\$6.02 per ft.	\$4.41 per ft.
Quebec.....	Father Point.....	3.40 “	4.46 “	5.54 “	3.93 “
Father Point.	Chicoutimi.....	3.87 “	4.95 “	6.02 “	4.41 “
Chicoutimi.....	Father Point.....	3.40 “	4.46 “	5.54 “	3.93 “
Quebec.....	Tadoussac.....	3.40 “	4.46 “	5.54 “	3.93 “
Tadoussac.....	Quebec.....	3.87 “	4.95 “	6.02 “	4.41 “
Tadoussac.....	Chicoutimi.....	$\frac{2}{3}$ of 3.87 (2.58)	$\frac{2}{3}$ of 4.95 (3.30)	$\frac{2}{3}$ of 6.02 (4.02)	$\frac{2}{3}$ of 4.41 (2.94)
Chicoutimi.....	Tadoussac.....	$\frac{2}{3}$ of 3.40 (2.27)	$\frac{2}{3}$ of 4.46 (2.98)	$\frac{2}{3}$ of 5.54 (3.70)	$\frac{2}{3}$ of 3.93 (2.66)
Father Point or any place below the anchorage of Brandy Pots off Hare Is- land	Anchorage or mooring ground in the Basin or Harbour of Que- bec	3.87 per ft.	4.95 per ft.	6.02 per ft.	4.41 per ft.
The anchorage ground at the Brandy Pots off Hare Island or any place above the said anchorage ground and below St. Rochs Point.	The anchorage or mooring ground in the Basin or Har- bour of Quebec	$\frac{2}{3}$ of 3.87 (2.58)	$\frac{2}{3}$ of 4.95 (3.30)	$\frac{2}{3}$ of 6.02 (4.02)	$\frac{2}{3}$ of 4.41 (2.94)
St. Roch's Pt. or any place above this point and below the Pointe- aux-Pins or Crane Island	Anchorage or mooring ground in the Basin or Harbour of Que- bec	$\frac{1}{3}$ of 3.87 (1.29)	$\frac{1}{3}$ of 4.95 (1.65)	$\frac{1}{3}$ of 6.02 (2.01)	$\frac{1}{3}$ of 4.41 (1.47)
Pointe-aux-Pins, or Crane Island, or any place below St. Patrick's Hole	The Anchorage or mooring ground in the Basin or Harbour of Que- bec	$\frac{1}{4}$ of 3.87 (0.97)	$\frac{1}{4}$ of 4.95 (1.24)	$\frac{1}{4}$ of 6.02 (1.50)	$\frac{1}{4}$ of 4.41 (1.10)
The Anchorage or mooring ground in the Basin or Har- bour of Quebec	Father Point or the place where the pilot shall be discharged in the river below Que- bec	3.40	4.46	5.54	3.93

MOVAGES

- For the movage of a vessel shifting from one berth to another at the same wharf or within the Louise Basin or in the inner harbour.....\$ 5.00
- For the movage of a vessel from any of the wharves in the outer portion of the harbour to the Louise Basin, or in the inner harbour in the St. Charles River and vice versa..... 10.00
- For the movage of a vessel from any of the wharves in the harbour of Quebec to the Levis dry docks, and vice versa..... 15.00
- For the movage of a sea-going vessel from any of the wharves in the harbour of Quebec to the explosive grounds..... 15.00
- And should the pilot be detained on board for more than 24 hours, he is to be paid an additional rate of (per day)..... 10.00
- For the swinging of a vessel during compass adjustment..... 15.00



Part of Quebec Harbour, showing Breakwater and Tidal Basin,

DETENTION

"If a licensed pilot when in the course of piloting a vessel is detained on board by special request of the Master or Agent, he shall be entitled to suitable board and accommodation and the sum of \$5.00 per day over and above the pilotage dues payable to him; no detention shall, however, be payable when a pilot is detained owing to stress of weather, or accidents for which he is responsible."

N.B.—Pilots taking charge of vessels at St. Patrick's Hole or above it shall be entitled to no more than the sum allowed for piloting vessels from one part of the Harbour to another.

No vessel is compelled to employ a pilot in the Quebec or Montreal districts, but the payment of pilotage dues is compulsory, with the following exemptions:—

1. Ships belonging to, or, wholly employed by His Majesty.
2. Steamships trading in the maritime provinces of Canada.
3. Steamships trading to New York, or, any United States port north of New York.
4. To Newfoundland.
5. In River St. Lawrence, all vessels registered in Canada, if not more than 250 tons register.

N.B.—No ship shall be exempted on any ground whatever from the liability to pay pilotage dues earned by any licensed pilot voluntarily taken on board of such ship by the master for the purpose of piloting her, whether the payment of pilotage dues is or is not, for the time being, otherwise compulsory in the district in which such pilotage dues are earned.

Consuls or Consular Agents for the principal maritime nations are stationed at Quebec.

Salvage Plant.—The Quebec Salvage and Wrecking Company, Limited, operate a plant at Quebec.

Princess Louise Tidal Basin on the northeast side of Quebec, has an area of about 20 acres, a quay frontage of 1,100 yards, and general depth of 26 feet at low water spring tides, the deepest water, 29 feet, being at Pointe-à-Carcy front. The entrance to the tidal basin is 200 feet in width.

Wet Dock.—The wet dock, opening from the tidal basin, is an inclosed basin, with a quay frontage of 1,100 yards, and an area of about 40 acres. The general depth is 25 feet; that on the sill of the gates being 28 feet. The width of the entrance from the tidal basin is 66 feet; vessels can enter the wet dock at each high water, day and night.

Regulations for Entering.—The entrance gates are usually open an hour before, and kept open until high water. Vessels wishing to enter, or leave the wet dock, must be ready to do so immediately on the opening of the gates, but may not proceed through until signalled to do so by the superintendent, and no vessel may enter or leave the wet dock without the assistance of a tug.

Breakwater.—The breakwater on the northeast side of the entrance to the tidal basin has a length of 2,950 feet, with a depth of 40 feet at low water. Immigrants from Europe are disembarked here to undergo Government inspection. Pointe-à-Carcy wharf, on the southwest side of the entrance to the tidal basin, has a river frontage of 580 feet, and a depth of 40 feet at low water.

QUEBEC HARBOUR FACILITIES

The facilities now available at Quebec, may be summarized as follows:—
In wet dock.—Six berths of from 400 to 500 feet in length.

In Tidal Harbour.—Four berths of from 400 to 500 feet in length.

Breakwater.—Four berths of 500 feet in length, or 3 berths of 700 feet in length, or 2 berths of 1,100 feet in length.

Pointe-à-Carcy Wharves.—Four berths, one ocean, two coasting and one bunkering.

River St. Charles Basin.—Seven berths of from 500 to 600 feet in length.

DEPTH OF WATER AT LOW TIDE

Wet Dock.—Twenty-five to twenty-six feet at low tide.

Tidal Harbour.—Twenty-four to thirty feet at low tide.

Breakwater.—Over 40 feet at low tide.

Pointe-à-Carcy Wharves.—Opposite Shed 21: Ocean berth, over 40 feet at low tide.

River St. Charles.—Thirty-five feet at low tide. Channel widens-out to 1,000 feet, north of Breakwater.

Tides.—The average spring range is 18 feet, and the neap range 10 feet.

The ebb stream has a rate of $4\frac{1}{2}$ knots an hour off pointe Lévis, the flood stream a rate of $3\frac{1}{2}$ knots abreast the citadel.

Mean Sea Level at Quebec.—As found from the observations at the dry dock at Lévis; determined from the hourly ordinates of the tide, above the Low-water datum at elevation 107.78 during the following complete years of observation:—

One year from—January, 1894, to January, 1895..	8.655
January, 1895, to January, 1896..	8.509
February, 1896, to February, 1897..	8.491
February, 1897, to February, 1898..	8.648
March, 1898, to March, 1899..	8.563
March, 1899 to March, 1900..	8.575
March, 1900, to March, 1901..	8.542
March, 1901, to March, 1902..	8.690
July, 1902, to July, 1903..	8.763
July, 1903, to July, 1904..	8.624
(Admission to gauge impeded by accumulation of mud)	
One year, from—April, 1905 to April, 1906..	8.517
April, 1906, to April, 1907..	8.444
April, 1907, to April, 1908..	8.749
April, 1908, to April, 1909..	8.642
April, 1909, to April, 1910..	8.870
April, 1910, to April, 1911..	8.523
For sixteen years. General average..	8.613

River Slope at Quebec.—Mean sea level or local half tide at Quebec as found from the hourly ordinates of the tide, is undoubtedly higher by about $1\frac{1}{2}$ feet than the true mean level of the ocean. An evaluation of this difference from connection of levels made at Rouse's Point with the New York lines, was fully stated in a Paper by the Superintendent of the Tidal Survey, published by the Canadian Society of Civil Engineers in November, 1908. The difference then given was 1.46 feet, and when corrected in 1914 for later determinations in the series of connections, it became 1.52 feet above Mean Sea level at New York. The through levels of the Geodetic survey give the following result, from Mean Sea level at Halifax as checked at Father point:—

Bench-mark LXXIV at Lévis dry dock; elevation above Mean Sea level according to the Geodetic levels of 1915..	15.63
Mean Sea level or local half tide as determined by the Tidal Survey relatively to this Bench-mark..	13.97
Half tide above oceanic Mean Sea level..	1.66

GRAIN ELEVATORS

One fireproof concrete grain elevator with a capacity of 2,000,000 bushels with marine tower, conveyors and grain galleries; loading capacity, 60,000 bushels per hour. It has also a grain dryer, a "Richardson separator," and a bagging shed.

Facilities and Equipment for Handling Cargoes, etc.

- 4 Locomotives for switching cars.
- Railway lines to all ships' berths and sheds.
- One 50-ton Floating Crane.
- Cars and scows for removing ships' ballast.
- 5 locomotive cranes, with capacity up to 38 tons.
- City water, electric light and power installations.

Grain Cargoes

Loading capacity, 60,000 bushels per hour.

Unloading from vessels: 160,000 bushels per day. This service is being increased to 240,000 bushels per day.

Unloading from cars: 100 cars per day.

Drying grain: 3,000 bushels per day.

Cleaning grain: 40,000 bushels per day.

RAILWAY FACILITIES

The Quebec Harbour Commissioners have 16 miles of tracks on docks for handling freight. Shunting on docks is done by Harbour Commission.

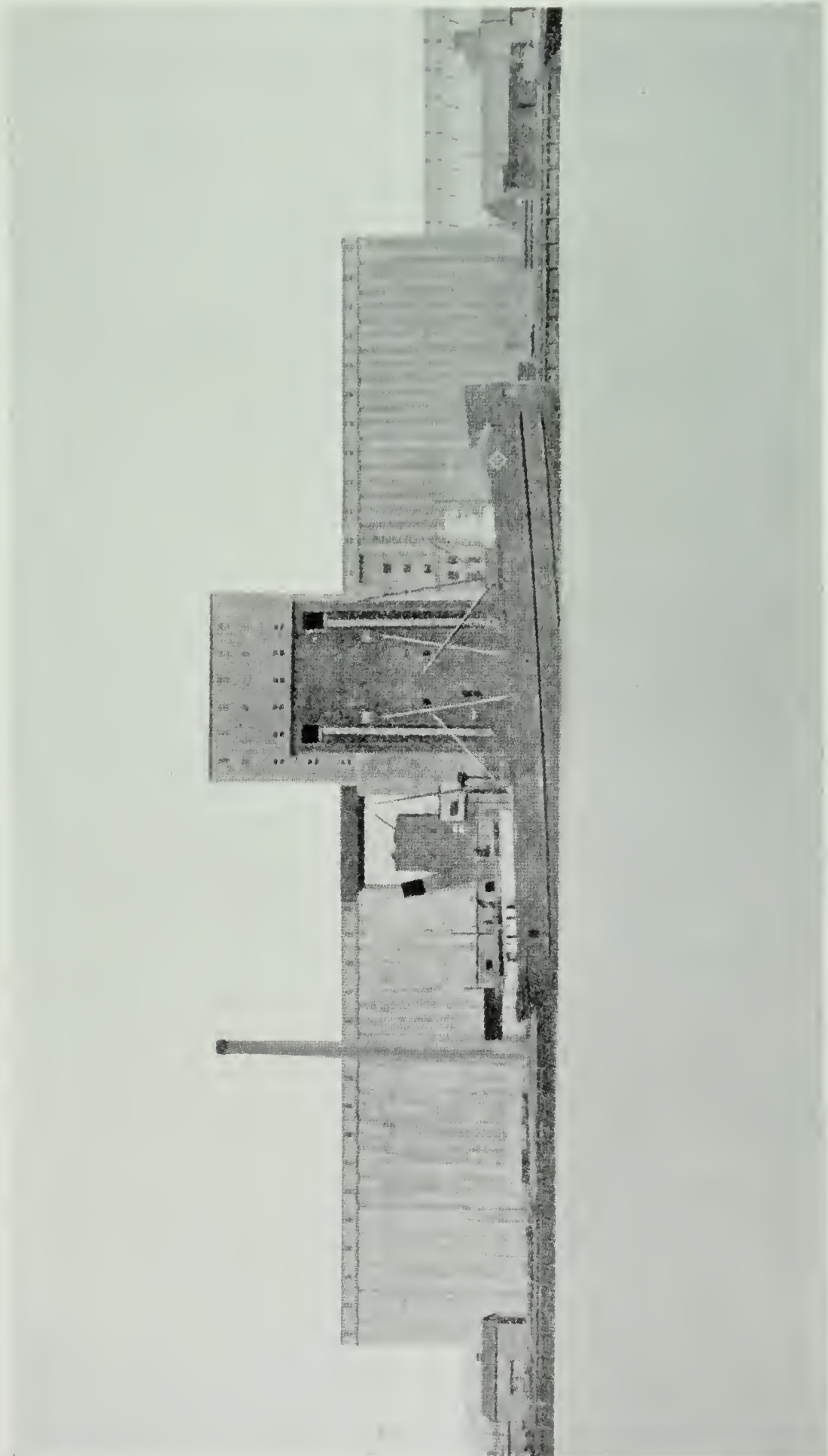
With the completion of the Quebec bridge, the docks are now accessible to all railways.

The Canadian Pacific Railway and the Canadian National Railways (Canadian Northern, National Transcontinental and Grand Trunk Railway) have their Quebec terminals right within Quebec harbour.

LANDING SHEDS

No.	Location	Size	Area
			Sq. ft.
14.....	Crosswall	200 x 38	7,600
18.....	Breakwater	744 x 37½	28,275
19.....	Pte-à-Carey	450¼ x 80¼	36,103
20.....	"Montcalm"	800 x 111	79,600
21.....	Pte-a-Carey	383 x 80	26,000
22.....	Louise Embk.	200 x 60	11,400
25.....	Pier No. 1	557½ x 80	43,000
26.....	Pier No. 1	737½ x 80	59,040
27.....	Pier No. 1	955 x 80	77,280
28.....	Bulkhead	776 x 75	58,200
29.....	Bulkhead	1,000 x 102	102,000
52.....	Store	128½ x 60	7,710
			536,208

Combined space of all sheds: 536,208 square feet of floor area.



View showing Quebec Harbour Commissioners' Elevator No. 2, with Grain Barge unloading at Marine Tower, September, 1921.

Harbour Regulations.—All steam vessels passing through the harbour on the Quebec side, between Mariners chapel and the entrance to the basin, shall keep at least 100 yards from the front of the wharves.

Speed.—Between Indian cove and Cap Rouge, no ocean steamship shall proceed at a higher rate of speed than 6 knots. No vessel shall anchor within two cables of the wharves, except in cases of emergency, or for purpose of hauling alongside a wharf.

A *Watch* shall be kept on board all vessels from sunset to sunrise. No vessel shall occupy a berth at the breakwater, or in the basins, without permission from the Harbour Master. The river front of the breakwater is reserved for incoming passenger steamers.

The use of the steam whistle is forbidden, except for navigation purposes.

Holidays.—The public holidays in the Province of Quebec are:—January 1st to 6th, Ash Wednesday, Annunciation (25th March), Good Friday, Easter Monday, Ascension Day, Victoria Day (24th May), Corpus Christi, Dominion Day (1st July), Labour Day, All Saints' Day, Immaculate Conception (8th December), and Christmas Day.

Time Signal.—A time signal is made from a mast 354 feet above high water on Mann's bastion of the citadel, daily, except Sundays; a ball is hoisted half-way up, a quarter of an hour before, and to the masthead, five minutes before the signal. The ball is dropped at 1 h. 0m. 0s. p.m. "Eastern," or 75th meridian mean time, equivalent to 6h. 0m. 0s. p.m. mean time at Greenwich. If the signal is inaccurate, the ball is again hoisted half mast, and retained there half an hour. The ball is in latitude $40^{\circ} 48' 23''$ N and longitude $71^{\circ} 12' 23.4''$ W. of Greenwich.

Graving Docks and Repairs.—The harbour of Quebec possesses two graving docks: One 600 feet by 62 feet wide at entrance; (new) 1,150 feet long by 120 feet wide at entrance, capable of taking the largest vessels afloat, with workshops in connection capable of executing all required repairs.

Tugs can be hired at Quebec, arrangements being made beforehand by telegraph. There are two powerful tugs, the *Lord Strathcona* and the *Gopher*. The former is owned by the Quebec Salvage and Wrecking Co., Ltd., and the latter by the Canadian Pacific Co., Ltd. These two boats are available at any time by giving four hours' notice.

Supplies of all kinds can be obtained in Quebec; water from the water works is laid to the wharves, and can be purchased at a small charge.

COAL CAPACITY AND BUNKERING (ANTHRACITE AND BITUMINOUS)

Coal companies have 5 towers for discharging and loading coal.

Bunkering is now done from barges and coal cars brought alongside the vessel.

New modern bunkering plant will be built this year along the Bulkhead Quay Front. (Depth of water: 35 feet at low tide).

Fuel Oil Bunkering.—The Commissioners have a fuel oil pipe line running from tank on Louise docks to berths 18, 25 and 26 at breakwater, and berths 27, 28 and 29 on St. Charles River front.



View of part of Quebec Harbour from the Citadel, showing Dufferin Terrace.

Seamen's Institute.—There is a Seamen's Institute in Quebec, and sick seamen are cared for at the Jeffrey Hale hospital, and Hôtel-Dieu. Seamen are shipped under the direction of the agent of the Department of Marine and Fisheries.

Communication by water with the north and south shores of the gulf St. Lawrence. A steamer of the "Clarke Steamship Co. Ltd." runs fortnightly to Summerside, Charlottetown, calling at the principal gulf ports on the way.

North Shore.—Two steamers of the "Clarke Steamship Co. Ltd." under mail contract with the Government, leave Quebec weekly for Natashquan, calling at all the ports on the coast, from Franklin, eastward. One of these above mentioned steamers leaves Quebec fortnightly for Harrington and Bradore bay.

Up to the middle of June, and after the month of September vessels of the "Richelieu and Ontario Navigation Company" run from Quebec to Murray Bay, Tadoussac, Chicoutimi (Saguenay river) and certain other places between, twice a week. In July and August, they run daily. The same company steamers run daily to Montreal, calling at Batiscan, Three Rivers and Sorel.

Steamers of the "Quebec and Levis Ferry Company" run several times a day to Sillery, New Liverpool and Ste. Petronille of Orleans island. A steamer of the "Compagnie Maritime et Industrielle" runs daily to St. Jean on Orleans island and to St. Michel and Berthier on the south shore. A steamer runs twice a week to Pointe Platon, Lotbiniere, Ste. Emilie and Deschailons on the south, and to Cap Sante village, Deschambault and Grondines on the north shore, above Quebec.

OVERSEAS STEAMSHIP LINES TRADING FROM QUEBEC, WITH THEIR ROUTES

Anchor Donaldson Line.. . . .	Glasgow via Montreal.
Canada S.S. Lines.. . . .	Montreal and Saguenay.
Canada Pacific Ocean Services, Ltd.....	Liverpool, London, Avonmouth, and Glasgow via Montreal.
Cunard Line.. . . .	Liverpool via Montreal
France-Canada Line (Fracanda).. . . .	Havre via Montreal.
Manchester Line.. . . .	Manchester, Eng.
White Star-Dominion Line.. . . .	Liverpool via Montreal.

COASTWISE STEAMSHIP LINES TRADING FROM QUEBEC, WITH THEIR ROUTES

Canadian Import Co., Ltd..	Great Lakes.
Dominion Coal Co., Ltd..	Sydney, N.S.
Gulf St. Lawrence Trading and Shipping North Shore coast and Gaspé & Co., Ltd..	Baie des Chaleurs.
Kirkwood S.S. Line.. . . .	Montreal and Chicoutimi.

Trade.—For the fiscal year 1921-22, value of imports \$16,629,548; of exports \$12,916,565.

Shipping.—For the fiscal year ending December 31st, 1922, there were entered at the port of Quebec 601 arrivals and departures, classed as follows: 154 coasting vessels from seawards, with a total gross tonnage of 139,566 tons. From Montreal and Great Lakes, 81 vessels, total tonnage, 104,486 tons. Sea-going vessels, inwards 259 vessels, tonnage 2,473,273 tons. Sea-going vessels, outwards 107, tonnage 871,205 tons. (Note, this report does not include sailing vessels and other small crafts).

Lloyd's Agent.—Geo. E. Fry, 67 St. Peter Street.

Shipbuilding Plants.—Davis Shipbuilding and Repairing Co. Ltd., Levis, P.Q., and Le Chantier Maritime de St.-Laurent Ltée, St. Laurent, I.O., for small craft and repairs.

Levis on the southeast side of the harbour, opposite Quebec, had in 1921 a population of 10,470. Its most prominent buildings are the college, Notre Dame church, and the hospital of St. Joseph de la Delivrance surmounted by a spire and statue. The stations of the "Intercolonial" and "Grand Trunk" railways are near the shore of Levis; the former near the ferry landing, and, the latter, three-quarters of a mile above it. Passengers by the "Intercolonial" cross to Quebec by the ordinary ferry; those by the "Grand Trunk" by a steamer crossing to suit the trains. In 1920 Levis had 34 industrial establishments employing 341 hands, value of products \$926,894.

Docks.—Levis dry dock, belonging to the Dominion Government, is situated on the Levis side of the river, and close west of Indian cove, to which the electric car runs. It can accommodate a vessel 550 feet in length, if not too broad for the entrance which is 62 feet wide. To find the depth of water on the sill of the dock at any tide add 7.7 feet to the height of high water as given in the tide table.

Davie's Floating Dock.—Is situated at Levis, about 300 yards northeast of the ferry landing stage. It is 180 feet long, the breadth of entrance being 39 feet, and it takes a vessel drawing 13 feet; its lifting power is about 1,000 tons.

Quebec and Levis Ferry Company Floating Dock.—Is situated also at Levis, and half a mile southwest of the ferry landing stage. It is 225 feet long over all, 41½ feet broad in entrance, and takes a vessel drawing 16 feet.

Patent Slip.—Davy's patent slip is 200 yards northeast of Davy's floating dock; the cradle is 120 feet long, and can accommodate a vessel drawing 10 feet.

Quebec and Levis Ferry Company Gridiron.—200 feet in length, is situated close to the floating dock belonging to the same company.

Shipping.—During the fiscal year 1921-22, 151 vessels, register tonnage 185,157 entered the port; 146 vessels register tonnage 184,464 cleared.

Riviere du Loup, P.Q.—is on south side of the St. Lawrence river, opposite Hare island, inside Pointe de la Riviere du Loup, and at the mouth of the river of the same name. A depth of 8 feet can be carried at high water to the mills near the bridge, about 1¾ miles from the Pointe.

At low water, there is a depth of 2 feet at the entrance to the river.

Anchorage.—Off Pointe de la Riviere du Loup in depths of from 4 to 5 fathoms, is sheltered from all but northerly winds, with good holding ground. There is a depth of 4 fathoms to within 2½ cables of the pier at the pointe.

Light.—On end of government wharf or pier, a white square wood tower shows from 36 feet above high water a red fixed light.

Tides.—Springs rise 18 feet, neaps 12 feet, with strong northerly winds the ebb tide sets up a bit of a sea at the head of the wharf, preventing small craft from berthing there.

Wharf.—From the northern entrance point of the river at Pointe Riviere du Loup, a government wharf extends about 1,600 feet N.W. with a depth of 14 feet at low water at its outer head, and 9 feet at SW. side of head. Inside the T on NE. side it is dry at low water. A railway for freight only, in connection with the Intercolonial or Canadian National Railway extends to end of pier.

An hotel, telegraph and post office, open from May to October, are at inner end of pier, with telephone connection between the telegraph office and Fraserville, and long distance to Quebec.

Port Charges.—There is a harbour master and the charges are harbour master's and sick mariners' dues.

Marine Signal and Telegraph Station is established near the inner end of the wharf, and signals from passing vessels are answered from a flag staff on the point.

Coal.—The Intercolonial railway supplies coal which can be loaded from trucks at the end of the pier. A small quantity is kept in stock at Riviere du Loup, St. Flavie, and St. Charles junction, but any quantity can be brought from Pictou collieries in 50 hours or from Springhill mines in 39 hours.

Water.—Good water can be obtained in any quantity from a stand pipe on the end of wharf on application to the Fraserville authorities.

Supplies.—Ships' supplies of all kinds are obtainable.

Communication.—Postal and telegraph, and telephone—is a terminus of the Temiscouata road, Riviere du Loup to Connors, N.B., and a station on the Intercolonial branch of the Canadian National system.

Town of Riviere du Loup or Fraserville.—Is built close inshore of entrance to river, and is the shire town of Temiscouata county, contains 2 conspicuous churches, a stone courthouse, several manufactories and pulp mills, and up to date hospital.

The engineering works of the Intercolonial Railway where small repairs can be done are grouped about the railway station.

Is a favourite summer resort. Population in 1921 was 7,703.

Shipping.—During the fiscal year 1921-22, 7 vessels, register tonnage 1,855, entered and cleared the port.

Rimouski Harbour, P.Q.—is on south shore of the St. Lawrence. Rimouski wharf is about 3½ miles west of Father point. Barnaby island lies off Rimouski, its east end a little less than 2 miles in a NW. direction from Rimouski wharf. Barnaby island is 3 miles long and 400 yards broad at its widest point.

Between Barnaby island and Rimouski the channel is dry at low water, and there are numerous boulders. Shoal water extends some distance off the north shore of Barnaby island.

Anchorage.—In Rimouski road abreast of the wharf off east end of Barnaby island, there is anchorage in 4 to 4½ fathoms.

In Barnaby road off the west end of Barnaby island there is anchorage for small vessels with good shelter from easterly winds.

Rimouski Wharf.—There is a village at the wharf which is 2,300 feet long by 150 feet wide for 1,000 feet at the end with room at the west side for 3 ocean steamers to load at the same time, and depth alongside of 25 feet at spring tide. It has a short outer end running eastward in an "L" shape inside which is good shelter for small vessels except in easterly gales.

At low water the wharf has fourteen feet along the outer part of west side, 11 feet along the extreme end, and 10 feet along the eastern outer end.

There are 2 sheds on the wharf, and a branch line of the Intercolonial runs to the end of it.

Port Charges.—Are harbour master's and sick mariners' dues.

Supplies.—Provisions and water are obtainable but not coal in quantity.

Tides.—Rise 14 feet springs, $8\frac{1}{2}$ feet neaps.

Light.—On roof shed near outer end of Rimouski wharf a white square lantern shows from a height of 30 feet above high water a white fixed light, in connection with the light a hand fog horn answers signals from steamers in thick weather.

The Town.—Is $1\frac{1}{2}$ miles in a SW. direction from Rimouski wharf, it has a conspicuous church and several other religious buildings. Large sawmills are at the mouth of the Rimouski river which manufacture pulp, doors, sashes, etc., and lumber is shipped to Europe and South American countries. There is also a biscuit manufactory. It is the centre of a good agricultural district, and potatoes in quantity are shipped to the United States. Population in 1921 was 3,612.

Trade.—For the fiscal year 1921-22, value of exports \$300,471; of imports \$119,128.

Shipping.—During fiscal year 1921, 5 vessels, register tonnage 6,031, entered and cleared the port.

Sorel—is on the east side of Richelieu river where it enters the St. Lawrence. For a distance of 2 miles from the river mouth the depth of water is from 4 to 5 fathoms with good anchorage. Many vessels find winter quarters here.

Anchorage can be had off Sorel north or south of the ship's track in $5\frac{1}{2}$ to 8 fathoms, or anywhere between Sorel and Lanoraie.

Special Rule of the Road.—All vessels entering or leaving Sorel harbour must keep to the port side, unless otherwise signalled.

Signal Station.—A signal mast with yard is erected on the Government wharf at Sorel for communication day and night with passing vessels.

Range Lights.—On the Richelieu Company's wharf at east entrance point of the Richelieu river two white, square, steel skeleton towers, 300 feet apart, show at heights of 43 feet and 59 feet above the water, fixed red gas lights.

Wharves.—There are 6 wharves along the river front including the Government wharf with a total frontage of 6,350 feet.

The Government wharf on the east side of the river entrance has a quay frontage of 1,665 feet with 25 feet depth of water alongside. There is a clear approach for 25-foot draught vessels from the ship channel, east of the line of range lights.

Four wharves on the west side have 18 feet alongside at low water.

Shipyards.—The Government shipyard is controlled by a director, who is an officer of the Marine Department. It covers 35 acres and contains a shipbuilding department, machine and boiler shop, moulding lofts, etc., and employs on an average a force of about 700 men.

It operates two patent slipways, the larger accommodating vessels of 1,200 tons, with a length of 230 feet and 33 feet beam, drawing 9 feet forward and 6 feet aft. The other with a hauling power of 700 tons accommodates vessels 150 feet long and 26 feet beam. There are two sets of sheerlegs for hoisting out boilers, machinery, etc., and one 30-ton travelling crane.

This yard also builds and repairs gas and whistling buoys, and the St. Lawrence ship channel plant is here overhauled during the winter and put into working order for the next season's operations.

Manceau's shipyard on west shore of the Richelieu $\frac{2}{3}$ of a mile from the mouth has a slipway accommodating ships up to 300 feet in length and 45 feet beam, up to 2,500 tons, as well as other slipways of lesser capacity.

There are two other shipyards in the port, Leclaire Shipbuilding Company, and Sincennes McNaughton Lines.

Repairs.—All necessary repairs to hulls, boilers, machinery, propellers, etc., can be made at the Government and Manceau's shipyards.

Port Charges.—Are harbour master's and sick mariners' dues.

Pilotage is under the Montreal Pilotage district; rates given elsewhere in description of port of Montreal.

Communication.—Sorel has direct railway connection with Montreal by the Montreal, Quebec and Southern road, and by the same road with the Intercolonial and Grand Trunk at St. Hyacinthe.

"Canada Steamship Lines" run daily to Montreal, Three Rivers, Batiscan and Quebec. A steamer of the "Montreal, Berthier and Three Rivers Line" runs three times a week to Three Rivers and Montreal, calling at Berthier and several other places on the northwest shore. Another branch of the Canada Steamship Lines called the "Montreal-Contrecoeur Line" runs three or four times a week to Montreal, calling at several places on the southeast shore of the St. Lawrence. A fourth branch, the "Montreal, Contrecoeur and Chambly Line" runs weekly to Montreal, and to Chambly and several other places on the Richelieu river.

The Town is built on the east side of the mouth of Richelieu river, and on the south side of the St. Lawrence.

The village on the west side of the Richelieu river is known as St. Joseph de Sorel.

A bridge carrying the "Montreal, Quebec and Southern Railway" crosses the Richelieu river $\frac{2}{3}$ of a mile from its mouth.

The town had in 1921 a population of 8,174.

Trade.—For the fiscal year 1921-22, value of imports, \$185,455; of exports, \$1,298.

Shipping.—In the fiscal year 1921-22 643 vessels, register tonnage 859,178 entered the port; 647 vessels, register tonnage 865,398 cleared.

Tadoussac Harbour, P.Q.—is on the east side of the Saguenay river about 5 miles above its junction with the St. Lawrence. The entrance is between points Rouge and Ilot. The bay is 5 cables wide and $2\frac{1}{2}$ cables deep to the drying line.

The harbour is well sheltered by land or reefs, but with N.W. winds gusts down river are strong, and vessels unless watched may drag their anchors. In the N.E. corner of the harbour small vessels are completely sheltered.

Anchorage for deep draught vessels is in 16 to 18 fathoms hard sand and clay; although it is quite out of the tidal streams, eddies set into the bay causing vessels to swing.

Directions for Anchoring.—See Canadian Hydrographic Office 1916 St. Lawrence Pilot (below Quebec) page 41, covering chart No. 203.

Lights, Beacons, etc.—For description of lights and other aids to navigation, further hydrographic details, and general directions for entering the Saguenay river see Canadian Hydrographic Office 1916 St. Lawrence Pilot (below Quebec) pages 39 to 47 inclusive, covering chart No. 203, also Department's 1923 List of Lights and Fog Signals on the Atlantic Coast and Gulf of St. Lawrence to Head of Navigation.

Tides at Tadoussac springs rise 18 feet, neaps 11 feet.

Wharves.—L'Anse a L'Eau wharf in a small cove west of Tadoussac bay 215 feet long, with shed 50 feet by 24 feet, depth of water at wharf 10 to 19 feet.

Steamers of the Richelieu and Ontario Navigation Company call here, and there is a fish hatchery and salmon pond under Government direction.

At St. Catherines, on the opposite side of the river, is a wharf 300 feet long with 10 to 19 feet at low water alongside.

On north side of Pointe Ilot is a wharf with 21 feet at low water alongside, a road connects it with the Tadoussac hotel.

In Tadoussac bay a wharf with shed 50 feet by 24 feet on it, has 25 feet alongside.

Water and Supplies.—Provisions in limited quantities can be obtained at Tadoussac, and fresh water in any quantity from a stand pipe on the wharf in l'Anse a l'Eau on application to the authorities.

Port Charges.—There is a harbour master and usual port charges.

Storm Signals.—There is a storm signal station on summit of Pointe Ilot.

Pilotage is under the Quebec Pilotage district.

Communication.—There is daily communication during summer with Quebec, Chicoutimi and intermediate points by steamer, and in winter by mail carts via St. Catherines and Murray Bay to Rivière Ouelle. Government Telegraph service is in connection with the post office.

Tadoussac is the chief town in Saguenay county and contains three churches, one of them the oldest in Canada, built in 1747. Is a popular summer resort.

The Roman Catholic church is a conspicuous object. Tadoussac has four hotels including the Richelieu and Ontario Company one. Population of about 700.



Three Rivers Harbour, P.Q.—is on the north shore of the St. Lawrence river, at its junction with the St. Maurice river. The channel along the wharves is from 30 to 50 feet in depth, and the roadstead from 900 feet to 1,500 feet in width, with but little tide or current.

Harbour Commission.—The harbour is controlled by a Commission consisting of 3 Commissioners appointed by Governor in Council, The Mayor, ex-officio, and President of Three Rivers Board of Trade, who report annually to the Minister of Marine and Fisheries.

Wharves.—Three Rivers has a total wharf accommodation of 5,500 feet, with berthing for 6 of the largest ships of 30 feet draught. The SW. and newest portion known as Quay Bureau is 2,000 feet in length.

Of this wharf frontage the Commission owns and controls 4,500 feet, half of it comprises two wooden wharves, and the other half concrete, with a wharfage area of over 1,000,000 square feet, and storage sheds covering over area of 48,000 square feet.

At the mouth of the St. Maurice is the St. Maurice Lumber Co.'s wharf, 700 feet long with depth of 25 to 30 feet at front.

Range Lights on SW. side of Quay Bureau 500 feet from the water a brown square, steel skeleton tower shows from a height of 53 feet above high water a white fixed light.

The back or western light, $235^{\circ} 45'$ true, 600 yards from the front one, shows from a similar tower, at a height of 87 feet above high water a white fixed light. The lights in line lead from abreast gas black buoy 59C. to the Cap de la Madeleine lower range (see covering chart No. 11, 1920 Canadian "St. Lawrence Pilot above Quebec.")

Port Charges.—Are wharfage due, tonnage dues (a special charge), sick mariners' dues, and harbour dues.

Pilotage.—The rates are fixed by the by-laws of the Montreal Pilotage Authority (the Minister of Marine and Fisheries) and are:—Quebec to Three Rivers and vice versa—any vessel in tow, or propelled by steam (except as hereinafter mentioned) for each foot draught of water \$1.50 upwards, \$1.50 downwards; any inland or coasting vessel propelled by steam, for each foot draught of water \$1.75 upwards, \$1.75 downwards; any sea-going vessel propelled by steam for each foot draught of water

Trois-Rivières, P.Q., Harbour.

\$2.10 upwards, \$2.10 downwards; any vessel under sail, for each foot draught of water, \$2.60 upwards, \$1.90 downwards.

Tides.—The maximum rise and fall is only about 1 foot.

Communication.—Three Rivers has railway communication with Quebec and Montreal, by the “Canadian Pacific”; with Grandes Piles on the St. Maurice; and with the “Canadian National” railway at Shawinigan Falls and Garneau junctions. On the southeast side of the St. Lawrence, by means of the ferry to Doucet landing, Three Rivers has connection with the “Intercolonial” and “Grand Trunk” railways at Aston and Victoriaville junctions, respectively. Steamers of the “Canada Steamship Lines” run daily to Quebec, Batiscan, Sorel and Montreal, during the summer. Vessels, also, of the same company, and termed the “Montreal, Berthier and Three Rivers” line, run three times a week to Montreal, calling at Sorel, Berthier, and several places between.

Signal Station.—A signal mast, with yard, is erected on Quay Bureau for the purpose of communication, day and night, with passing ships.

Wireless Telegraph Station is established at Three Rivers, call letters V. C. B., range 150 sea miles.

Ocean Traffic, 1922.—

Nationality	No.	Total Reg'd Tonnage
British.. . . .	19	50,089 tons
Norwegian.. . . .	9	18,572 “
American.. . . .	4	15,474 “
French.. . . .	2	5,107 “
Danish.. . . .	2	1,898 “
Dutch.. . . .	1	2,964 “
Canadian.. . . .	1	2,603 “
Swedish.. . . .	1	1,072 “
Total.. . . .	39	97,779

The nature and quantity of the inward cargoes were as follows:—

Coal.. . . .	105,112 tons
Fuel oil.. . . .	4,707,774 gallons
Pig iron.. . . .	7,502 tons
Salteakes.. . . .	9,840 “
Sulphur.. . . .	27,877 “

Return cargoes consisted of lumber, 2,841,075 F.B.M. and paper, 5,917 tons.

United States Traffic.—Traffic with the United States amounted to 95 canal boats of a total registered tonnage of 18,919 tons.

Inward Cargoes	Outward Cargoes
Anthracite coal.. . . . 5,490 tons	Laths.. . . . 2,092,650 pieces
Moulding sand.. . . . 925 tons	Lumber.. . . . 6,726,999 F.B.M.
Paper Roll Cores.. . . . 1,001 pieces	Paper.. . . . 10,920 tons
Sulphur.. . . . 1,338 tons	Pulp.. . . . 757 tons

Inland Traffic.—Inland traffic brought 1,266 boats of 955,600 registered tonnage. The staples carried consisted of:—

Inward		Outward	
Apples..	3,650 bushels	Coal..	65 tons
Brick..	1,186,000	Concrete beams... .	425 tons
Cedar posts.. . . .	50	Hay..	27 tons
Cordwood..	1,483 cords	Lumber..	1,710,592 F.B.M.
Hay..	263 tons	River sand.. . . .	51,000 tons
Lumber..	1,806,105 F.B.M.	General cargo.. . .	6,000 tons
Pulpwood..	3,555 cords		
Shingles..	235,000		
General cargo.. . . .	10,000 tons		

RECAPITULATION

Ocean Traffic..	39 vessels	97,779 reg'd. tons		
United States Traffic.. . . .	95 "	18,919 "	"	"
Inland Traffic..	1,266 "	955,600 "	"	"
Total..	1,400 "	1,072,298 "	"	"

Shipbuilding.—During 1922 the Tidewater Shipbuilders Co. did repairs only. Three new ships were built by the Fraser Brace Co.: August 31, 1922, *N. H. Botsford*, of registered tonnage, 1,219; October 28, 1922, *Frank A. Augsbury*, registered tonnage, 1,220.9; December 9, 1922, *Edward L. Strong*, registered tonnage, 1,225.

The City is built on the west side of the St. Maurice river. Had in 1921 a population of 22,367, in 1920, 98 industrial establishments employing 6,099 hands, value of products, \$27,085,510.

Trade.—The chief exports are lumber, pulp, paper, concrete beams, and some manufactured goods.

For the fiscal year 1921-22, the value of the imports was \$4,679,402; of the exports \$48,515.

Shipping.—During the fiscal year 1921-22, 731 vessels register tonnage 892,439 entered the port; 729 vessels register tonnage 886,444 cleared.

Trois Pistoles, P.Q.—From a point distant $\frac{6}{10}$ of a mile from the church at Trois Pistoles, in a NNW. direction on the south shore of the St. Lawrence, is built out in a NW. direction, a wharf with a breakwater on its NE. side; the wharf has about 12 feet alongside at high water. Off the end of the wharf are numerous boulders, and no vessels should go alongside until near high water. The wharf shed in line with the highest spire of Trois Pistoles church will carry 7 feet at lowest tides to within 8 cables of the wharf.

Light.—From a mast on outer end of wharf, is shown at a height of 23 feet above high water, a white fixed light.

Tides.—Spring rise $16\frac{1}{2}$ feet, neaps $9\frac{1}{2}$ feet.

Communication.—Postal and telegraph, and is a station on the Inter-colonial branch of the Canadian National system.

The Village of Trois Pistoles had in 1921 a population of 1,454. The church with 3 spires, one higher than the other two is a conspicuous object; a number of summer cottages are grouped about the inner end of the wharf.

BRITISH COLUMBIA.

Alberni Harbour, B.C.—west coast of Vancouver island extends in a general N.E. direction for about 23 miles from Nob point the S.W. entrance point of Alberni canal to Port Alberni at its head. The width of the canal varies from 2 cables to 1 mile, and terminates in a fine anchorage at its head; the water is deep from Nob point to head of canal.

The Somass river enters the head of the harbour and $1\frac{1}{2}$ miles up from its mouth and Port Alberni, a channel of 15 feet depth at low water has been dredged to the town of Alberni. Alberni harbour is open all year.

Beacons.—Four pile beacons mark the channel entrance to Alberni.

Wharves.—A continuous wharf along the shore owned by the Alberni Pacific Lumber Co. is 4,500 feet long and 500 feet wide, depth of water 25 feet at one end and 60 feet at the other at low tide.

The Esquimalt and Nanaimo Railway has a wharf 200 feet long and 75 feet wide with 27 feet along side at low tide. There is government wharf 75 feet by 40 feet with 20 feet depth at low side, also a number of smaller floats and wharves.

Tides.—Rise springs $10\frac{1}{2}$ feet, neaps 8 feet.

Supplies.—Oil, fuel oil, coal, wood, water, provisions, etc.

Quarantine Regulations.—An inspecting officer is stationed at Port Alberni, who will clear any vessel which has a clean Bill of Health. In the case of illness requiring fumigation, vessels may be ordered to the Quarantine station at William head, Parry bay.

Vessels from ports on the Pacific coast of the United States, including Alaska, are exempted from the usual quarantine inspection, but in the event of epidemic disease prevailing at the port of departure this exemption is withdrawn, and the vessel must await inspection.

Should any case of infectious disease or suspicion of such develop during the voyage, a vessel must proceed without delay to the quarantine station at William head.

Communication.—Postal and telegraph—and a station on the Esquimalt and Nanaimo road, a branch of the C.P.R. connecting it with Victoria—also steamboat connection with Victoria.

The Town of Port Alberni had, in 1921, a population of 1,056; has church, post and telegraph offices, and a considerable export trade in lumber.

Shipping.—During the fiscal year 1921-22, 233 vessels register tonnage 104,939 entered the port; 240 vessels register tonnage 123,360 cleared.

Alert Bay, B.C.—on south side of Cormorant island—Broughton strait—three-quarters of a mile wide and half a mile deep, affords good and well sheltered anchorage in from 5 to 8 fathoms, sand and mud.

Yellow bluff, the west entrance point, has a boulder beach extending a cable southward into Broughton strait, and for an average width of 50 yards all round the bay.

Tides.—The mean rise is $13\frac{1}{2}$ feet.

Alert Bay Settlements.—On east shore of bay is a salmon cannery, post office, and Indian village, and off the cannery a pier with 10 feet at end.

On north shore is a church mission establishment, with church, sawmill, and a pier with 12 feet water at end, and fresh water laid on.

The Indian burial ground is conspicuous.

Wireless Telegraph.—On Cormorant island is a government wireless station, transmitting distance 350 miles, call letters V.A.F.

Communication.—Union Steamship Co. from Vancouver calls daily. C.P.R.-B.C. coast service, Vancouver, Ocean Falls, Prince Rupert route, from Vancouver, calls weekly. C.P.R.-B.C. coast service, Alaska route between Vancouver and Skagway, calls every six days.

Shipping.—During the fiscal year 1921-22, 669 vessels, register tonnage 325,597 entered and cleared the port.

Bamfield Harbour, B.C.—is on the east side of Eastern channel of Barkley sound, at 4 miles within cape Beale, at the mouth of Bamfield creek.

Bamfield harbour extends in a southerly direction inside Mills peninsula for $1\frac{1}{4}$ miles, with breadth of from 1 to 2 cables. At the bottom of the harbour are 2 small islands, Burlo and Rance, and the narrow passage between them, 30 yards wide with 6 feet at low water, leads into an inner basin, 1 mile long, with depths from 2 to 4 fathoms. About 2 cables northward of these islands in the middle of the creek or inlet is good anchorage in 5 fathoms, mud.

Tides.—In Bamfield creek springs rise 11 feet.

Life Saving Station.—There is a life saving station at Bamfield creek.

Communication.—Postal and telegraph. C.P.R. coast service steamer, between Victoria and Port Alice, calls four times a month—nearest railway station Port Alberni on C.P.R.

Shipping.—During the fiscal year 1921-22, 337 vessels, register tonnage 71,384 entered and cleared the port.

Lloyd's Agent.—D. Osborn.

Chemainus Harbour, B.C.—NE. coast of Vancouver island is entered from Stuart channel. Bare point, a long narrow peninsula, with lighthouse on its N.W. extremity, forms the eastern side of the bay or harbour, which extends in a southerly direction for about $\frac{3}{4}$ of a mile, and is about 3 cables in breadth.

Hospital point is the west entrance point of the bay, and about $1\frac{1}{2}$ cables northward of this point is Hospital rock with least depth of 11 feet. The east side of the harbour is steep to and can be approached to within 50 yards distance.

Anchorage.—The best anchorage is in the centre of the bay in 12 fathoms mud.

Tides.—Mean rise of 10 feet.

Light.—On extremity of Bare point, a white, square, wood tower shows from a height of 36 feet above high water, a white fixed light.

Port Charges.—As at other Canadian ports.

Piers—Wharves.—A pier is built out over the mud flat north of Hospital point, for a distance of 250 yards, is used for discharging logs brought down by rail. At south end of bay on west side is a large sawmill and lumber wharf in tiers, 180 yards long on outer side, with depth of 30 feet on northern half, shoaling quickly to only a few feet at the southern end.

Supplies—Water.—Fresh provisions of all kinds obtainable and water run down in pipes to lumber wharf.

Communication.—Postal, telegraph, and telephone, and station on Esquimalt and Nanaimo branch of B.C. division of C.P.R.

Chemainus Settlement on west side of the harbour, contains one of the largest sawmills in B.C., a hospital, churches, stores, two hotels, and post and telegraph offices. The place carries on a large export trade in lumber with Australia, South America, and the northwest provinces of the mainland.

Shipping.—During the fiscal year 1921-22, 346 vessels register tonnage 53,381 entered the port; 374 vessels, register tonnage 134,137 cleared.

Comox or Port Augusta Harbour, B.C.—occupies the head of Baynes sound—is a well sheltered anchorage half a mile in extent within Goose spit which forms the S.E. side of the harbour with depths of 12 to 14 fathoms, suitable for all classes of vessels, Grassy point is the southern entrance point, about half a mile to the southward of Goose spit.

Anchorage.—Good anchorage is to be found in the N.W. end of the harbour inside Goose spit, off Comox village, in 12 to 14 fathoms.

Light.—On west extreme of Goose spit, a white, steel, cylindrical tank shows from a height of 30 feet above high water, a white, red sector, occulting light.

Buoy.—A black can buoy marks the edge of the flat off Grassy point.

Tides.—Mean rise of tide at Comox is 12 feet.

Piers.—A long wooden landing pier extends southward from Comox village with depths of 12 to 14 feet along its outer end at low water.

There is a logging pier near Grassy point.

Supplies.—Ships' provisions in small quantities obtainable at Comox.

Wireless Telegraph.—At cape Lazo, about 3 miles northward of Comox, is a wireless station; call letters S.K.D. Range 350 sea miles.

Village of Comox on north shore of harbour, is the shipping place for the surrounding agricultural district—roads connect it with Nanaimo, Cumberland, and Courtenay—has post and telegraph offices—the nearest railway station is Courtenay on the C.P.R. system—is a port of call on Vancouver, Powell river and Union bay route of C.P.R.—B.C. Lake and River Service.

Esquimalt Harbour, B.C.—Vancouver Island—SE. coast, is immediately westward of Victoria harbour, and entered from Royal road, Juan de Fuca strait. The road, a fine sheet of water 3 miles in extent affords good anchorage, for vessels in northerly winds.

The entrance points of Esquimalt harbour are Fisgard island on the west and Duntze head on the east about 3 cables apart, but the channel width is 2 cables owing to Fisgard island dangers. Within the entrance the harbour opens out to the width of 1 mile, abreast of Constance cove, abreast of Plumper bay N.W. of Constance cove, it is about $\frac{1}{2}$ mile wide.

The harbour has a length of $1\frac{1}{2}$ miles with 8 fathoms at entrance, and general depths in Constance cove and the southern part of 5 to 7 fathoms. About 2 cables north of Dyke point, the N.W. point of Plumper bay, the depth is 3 fathoms gradually shoaling to Cole island at the head.

Anchorage.—There is safe anchorage in any part of the harbour in not less than 4 fathoms as far north as Dyke point. Thetis cove in Plumper bay is a snug anchorage for small craft.

Prohibited Anchorage.—From a point about 150 yards westward of the entrance to the Government dock, a submarine cable is laid in a 282° true direction to a point on the western shore of the harbour, situated about $1\frac{1}{2}$ cables northward to Rodd point.

Each landing place is marked by a white post with "Cable Crossing" painted thereon. Vessels must not anchor in the vicinity of the cable.

A direct south wind, to which some parts of Esquimalt harbour are open, seldom blows, and there is never sufficient swell to render the anchorage inconvenient.

Light.—On Fisgard island, a white circular brick tower, red brick dwelling attached, shows from a height of 67 feet above high water, a white, red sector, fixed light.

Beacon.—On Dyke point is a white beacon 23 feet high used as a leading mark for entering harbour.

Buoys.—A black spar buoy marks the east side of Whale rock near the centre of the harbour with least depth 7 feet.

A small black can buoy marks a rock $\frac{1}{2}$ cable east of Patterson point on west shore of harbour near the head.

Signal Tower.—Bickford's signal tower, 117 feet above high water, is on Grant knoll, N.W. entrance of Duntze head.

Tides.—Rise from 7 to 10 feet springs, and 5 to 8 feet neaps.

Direction for Entering Esquimalt Harbour.—See 1913 Admiralty "British Columbia Pilot," pages 58 and 59, covering chart No. 576.

Port Charges.—Are harbour master's and sick mariners' dues, similar to other Canadian sea ports.

Pilotage.—Non-compulsory.

Government Dry-dock.—Is on the north side of Duntze head, Constance cove. Length of dock to gate, 450 feet at keel blocks, width at gates 65 feet, depth of water 27 to 29 feet, minimum charge \$1 per day.

A contract for a new and much larger dry dock has been let to Messrs. P. Lyall & Sons, Ltd., of Montreal and Vancouver, estimated cost \$4,000,000, the work is now in progress.

Patent Slip—Repairs.—A patent slip or marine railway on east side of Constance cove accommodates vessels, 307 feet long and 43 feet beam, with 2,500 tons displacement. It is equipped with sheers lifting 25 tons at the outer end of the jetty, which has a depth of 22 feet at extreme low water. About 45 yards off the jetty is a dolphin to assist hauling vessels off the railway.

Repairs of almost any description to boilers, steam pipes, and hulls can be made.

Coal Wharves.—There is a coal wharf just east of the government dry dock with sheers capable of lifting 75 tons and 21 feet alongside.

Another coal wharf in Plumper bay, has extensive supplies of native coal sent from the mines, has also 21 feet alongside.

There is a wharf at Grant knoll with 15 feet alongside.

Lighters—Tugs.—There are 11 lighters with capacity of 60 to 200 tons, and 8 tugs at Esquimalt.

Supplies—Water.—Supplies are obtained from Victoria. A fresh water service is laid on the government dock at the rate of 60 cents per 1,000 gallons.

Communication.—Postal and telegraph. Is a terminus of the Esquimalt and Nanaimo road, a branch of the British Columbia division of the Canadian Pacific Railway, and connected with Victoria by electric railway. The terminus of the N. & E. road is at Thetis cove, Plumper bay, with extension to Victoria, a short spur runs to a ferry wharf at south entrance point of Thetis cove.

Ladner, B.C.—is on the south bank of the Fraser river at north end of Canoe pass, about 11 miles as the crow flies below New Westminster.

The harbour lies between Woodward islands on the westward and the main on the eastward is about $1\frac{1}{2}$ miles long with average width in the channel of one-quarter of a mile and depths of from 3 to 8 fathoms.

Ladner Settlement.—Is an important centre of the salmon fishing industry and there are a number of canneries in the vicinity—a sawmill called the Delta sawmill, and five or six wharves, including the Railway and Government wharves. There is a swing bridge near the north end of Canoe pass. Guichon to the SW. forms a part of Ladner.

Supplies.—Ordinary ships' provisions obtainable.

Communication.—Postal and telegraph—is terminal of the Sumas, Wash., to Guichon, B.C., railway. Port of call by local steamers from New Westminster to Vancouver, Ladner and Steveston.

Shipping.—During the fiscal year 1921-22, 142 vessels, register tonnage 6,773, entered the port, 145 vessels, register tonnage 6,799, cleared.

Ladysmith or Oyster Harbour, B.C.—Vancouver island—NE. coast—is entered from Stuart channel, between Sharpe point on the north and Boulder point on the south, a little more than a mile apart. From the entrance the harbour extends in a NW. direction for 4 miles and affords anchorage in any

required depth gradually shoaling from 20 fathoms abreast of Sharpe point to the head.

Woods islands, three in number, extend for about 1 mile in a NW. and SE. direction, on the north side and upper part of harbour.

Anchorage.—Good anchorage is in 7 fathoms mud, about 1 mile westward of Sharpe point in the middle of the harbour.

Tides.—Springs rise 10 feet, neaps 8 feet.

Light.—On Coffin island, north of Sharpe point, a white, steel, cylindrical tank shows from a height of 29 feet above high water, a white occulting light.

Wharves.—At Ladysmith are 3 coal wharves; 180, 266, and 130 yards in length, with depths of 29, 33, and 32 feet alongside respectively, the approach to them is free of danger. A mooring buoy is placed off each.

Port Charges.—As at other Canadian ports.

Pilotage.—Is non-compulsory.

Supplies—Water.—Supplies of all kinds are obtainable and water usually from the wharves, but not dependable during summer months.

Communication.—Postal, telegraph and telephone, and is a station on Esquimalt and Nanaimo branch of B.C. division of C.P.R.

Town of Ladysmith.—Is on south side of harbour, the country about hilly and densely wooded, there are a number of coal mines in the vicinity, the principal ones being the Extension and South Wellington mines. There is also a sawmill. The public school is a conspicuous building. Population in 1921 was 1,721.

Shipping.—During the fiscal year 1921-22, 2,372 vessels, register tonnage 836,593, entered the port; 2,369 vessels, register tonnage, 819,737, cleared.

Nanaimo Harbour, B.C.—is on the east side of Vancouver island. The entrance points are Gallows point on the north, and the mud flats west of Jack point on the south.

Two channels lead to the wharves at Nanaimo on the west side of the harbour, the north channel north of Middle bank in the centre of the harbour, and the south channel, south of Middle bank.

The depth of water in the north channel is 26 to 30 feet at low water, in the south channel 32 feet.

The usual route for vessels is to enter by the north channel, and leave by the south.

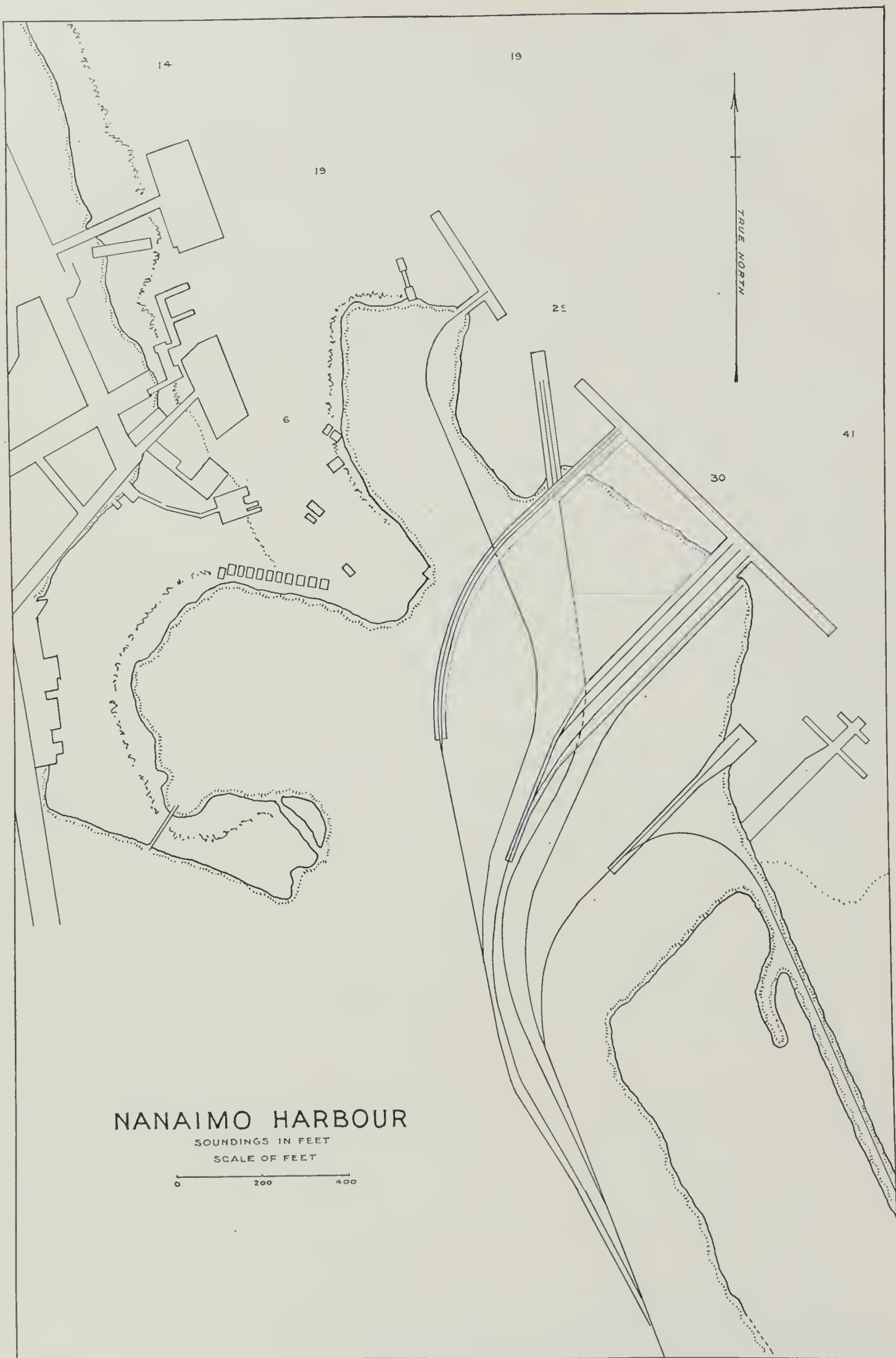
The anchorage ground off the town through the north channel is in 5 fathoms, mud, vessels can also anchor off Gallows point in 10 to 15 fathoms.

Buoys—Beacons.—The harbour is well buoyed having 7 platform buoys and 6 spar buoys.

A black gas buoy with occulting white light marks the north end of the middle bank.

A stone beacon with staff and lattice work is built on Beacon rock north of the C.P. Railway wharf.

A black pile beacon with acetylene tank showing a white flashing light is placed on the mud flats at the south entrance of the harbour, in about 6 feet



at low water. A red buoy in $3\frac{1}{2}$ fathoms of water marks the edge of the foul ground off Gallows point.

Departure Bay forms a part of Nanaimo harbour. Exit channel, 1 mile in length and 1 cable average width, between Newcastle island and the mainland of Vancouver island, connects the two, the least depth in Exit channel is on either side of Passage rock $2\frac{1}{2}$ cables northward of Reef point, the south point of Newcastle island. The rock, with 3 feet water on it, is marked by a black buoy.

Oregon rock awash at low water is 110 yards southward of Passage rock.

Exit channel on the north expands into Departure bay between Shaft and Finsbury points nearly a cable apart, with depths of 6 to 10 fathoms, deepening towards the bay to 16 and 18 fathoms.

The NE. entrance to Departure bay, $\frac{1}{4}$ of a mile in width, is between Nares point the NW. extreme of Newcastle island on the south, and Jesse and Brandon islands on the north.

The bay affords roomy anchorage for vessels in from 18 to 25 fathoms.

Lights.—On Entrance island north approach to Nanaimo, strait of Georgia, a white square wood tower, dwelling attached, shows from a height of 65 feet above high water, a white fixed, and flashing every 5 second, light. Diaphone in connection.

The Canadian Western Fuel Corporation maintain 2 red leading lights to guide vessels to their wharves, from the south channel.

Port Charges.—Are harbour master's and sick mariners' dues, according to regulations. Port Warden's fees when surveys are made; and wharfage.

Pilotage is non-compulsory. Local pilots meet vessels at Victoria.

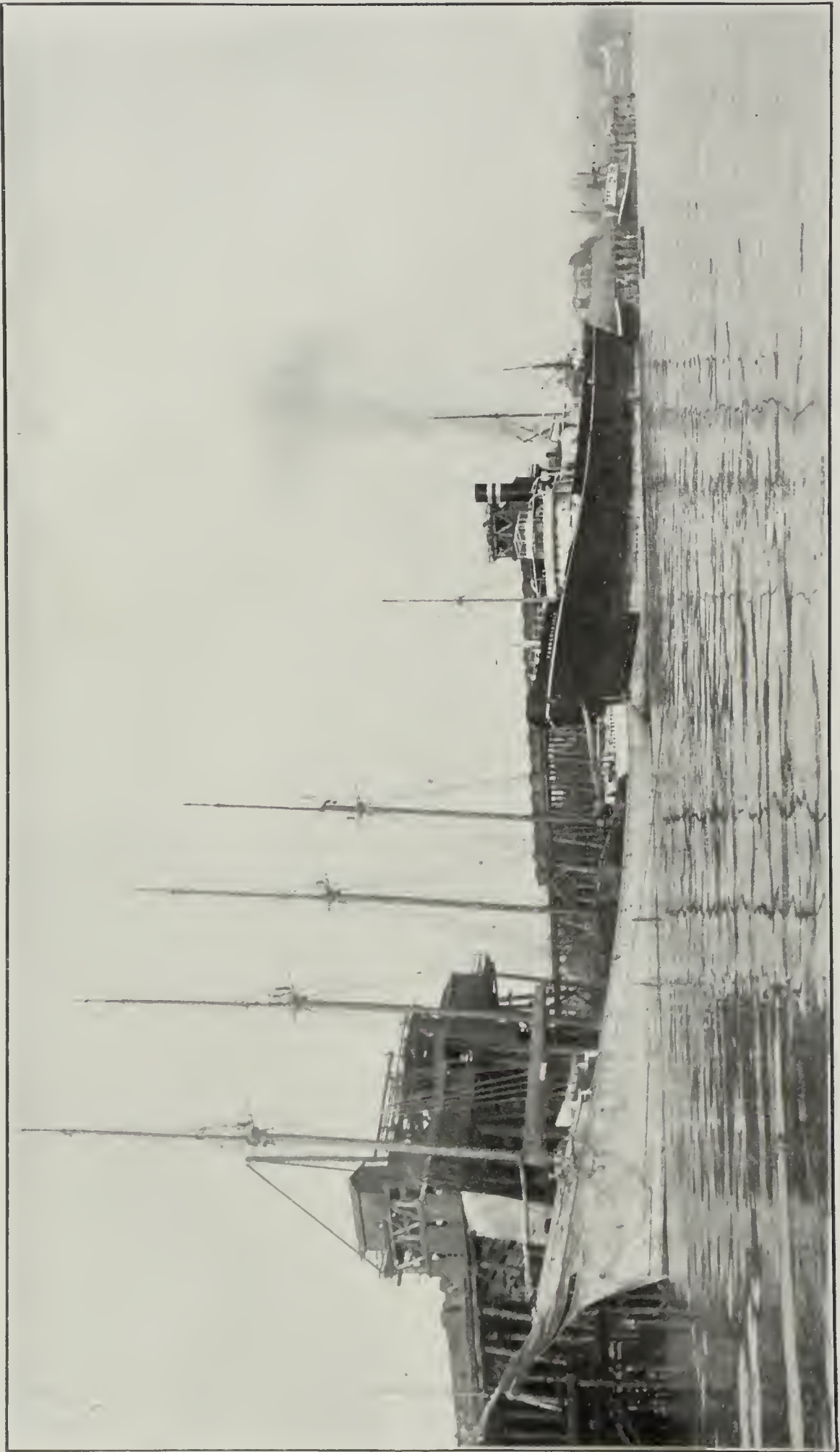
Tides.—Mean rise at Nanaimo is 12 feet.

Wharves.—The large wharves in the harbour are used for shipping coal, the main export of the port. In addition to full cargoes, many steamers call here for bunker coal. Nanaimo wharves, belonging to the Canadian Western Fuel Corporation, are on the west side of the harbour directly opposite the entrance and close to the town. The main wharf is 810 feet long; three loading chutes deliver 700 tons of coal per hour; in close proximity to the loading wharves, coal bunkers are situated with a capacity of 7,000 tons; depth of water alongside, 30 feet at low water; vessels of 10,000 tons load at this wharf.

A three-track car ferry slip is located on the south end of the main wharf, to make tidal and railway connection with the main line of the Esquimalt and Nanaimo Railway. This slip accommodates freight cars carried on barges to the mainland of British Columbia.

North of the main wharf is a smaller wharf, owned by the same company, for loading scows and bunkering small steamers, with two berths 160 feet long; another wharf, belonging to the same company is situated north of the last wharf and is used for discharging freight for the company and is 285 feet long; depth of water, 20 to 24 feet at low water; to the west of this wharf is a ferry slip used for Protection island ferry.

Rainey's wharf at foot of Wharf street is 200 feet long by 100 feet, with a depth of 15 feet at low water. The wharf is covered nearly its full length and



Nanaimo, B.C. Harbour and Coal Wharves.

breadth by sheds. This wharf is used by small coasting steamers for loading and discharging cargo.

Adjoining Rainey's wharf is the government wharf and float used as a public boat landing. Next comes the C.P.R. wharf, 250 feet long; is covered nearly its entire length by sheds for general merchandise and cattle. The wharf is used by passenger steamers plying between ports in British Columbia. Vessels of 2,000 tons can discharge cargo at this wharf at certain stages of tide; the depth at low water is 16 feet.

At the Red Fir Company's saw mill a pier is used for loading lumber on scows.

In Exit channel on mainland side, Hogan's wharf is situated; its length is 84 feet, width 72 feet, and it is nearly covered with freight sheds for general merchandise; 14 feet depth alongside at low water. Several small wharves with sheds in Exit channel are used for packing herrings for shipment to Orient.

Imperial Oil Company's pier, 500 feet long; T at end of pier 90 feet long, depth of water alongside, 15 feet at low water. On Newcastle and Protection islands are several small wharves with sheds used for landing and packing herrings caught in Nanaimo harbour and Departure bay.

Passing into Departure bay from Exit channel on the southeast side the Canadian Western Fuel Corporation maintain a small wharf which is used occasionally for storage purposes; it is about 150 feet long with a depth of water alongside of 35 to 40 feet.

On the west side of Departure bay the Canadian Explosive Co. have a wharf 160 feet long with a depth of water alongside of 25 feet.

Supplies.—All kinds of ships' stores are obtainable, and fresh water from the various wharves.

Repairs.—No dock or patent slip or facilities for large repairs to vessels, but minor repairs to hulls or machinery can be made at Dobesons foundry to small vessels placed on beams.

Hospital.—The charges at the Nanaimo hospital for sick seamen are \$10 per week.

Storm Signals are shown from the Custom House.

Shipping Office for seamen is at the Custom House.

Quarantine.—The Quarantine station for Nanaimo is at William head, Parry bay, and all vessels entering must report.

Coal.—At the Wellington Colliery, Nanaimo harbour, the coal lies in seams from 600 to 700 feet below the surface, and the workings extend under the sea for over 3 miles to the northward and 1 mile to the southward and eastward, from the Protection island shaft.

Three steamers of 6,000 tons capacity each can lie at the Canadian Western Fuel Corporation wharves at Nanaimo at the same time, and be simultaneously loaded with 10,000 tons of coal in 24 hours, previous notice being given.

The coal is discharged by chutes, whose heights are adjusted to the state of tide.

About 13,000 tons are usually kept in stock, but the supply of Wellington Colliery native coal is practically unlimited.

Communication.—Nanaimo is 73 miles by rail from Victoria, and a ferry runs between it and Vancouver distant 33 miles daily in connection with the C. P. Railway. There are local weekly steamers to Victoria, and it has telephone and telegraph connection with Victoria and Vancouver.

The Town of Nanaimo.—On the SW. side of the harbour—had in 1921 a population of 9,088—chiefly a mining one. The surrounding country has agricultural possibilities, and has been opened up by the Canadian Western Fuel Corporation, and other private enterprise.

In 1920 it had 61 industrial establishments, employing 405 hands, total value of products \$1,258,793.

Trade.—The exports are chiefly coal, iron, copper ore, and salt fish; the imports chiefly beef, mutton, cereals, and manufactured goods.

For the fiscal year 1921-22 the value of the exports was \$5,649,538; of the imports \$438,386.

Shipping.—During the fiscal year 1921-22, 3,751 vessels, register tonnage 768,769, entered the port; 3,832 vessels, register tonnage 822,072, cleared.

Lloyd's Agent.—J. S. Knarston.

Nanoose Harbour, B.C.—north coast of Vancouver island—is about 8 miles westward of Nanaimo; Notch hill close north of the harbour 854 high is a prominent landmark.

Between Richard point on the north and Entrance rocks off Fleet point on the south, the harbour runs nearly due east for about 2 miles with an average width of 7 cables and prevailing depths of 12 to 16 fathoms.

Imperieuse rock, with depth of 6 feet, lies $1\frac{3}{4}$ cables northward of Entrance rocks in the harbour entrance, somewhat narrowing it.

Anchorage.—The best anchorage is $1\frac{1}{2}$ cables WSW. of Ranch point, about the middle of the north shore of the harbour, in 14 fathoms, mud.

Tides.—Mean rise in Nanoose harbour is $12\frac{1}{2}$ feet.

Supplies.—Meat and vegetables are obtainable from ranches in the vicinity, and water from a stream on south shore just inside the entrance, near which is a wharf and Indian reserve.

Communication.—Main road between Nanaimo and Comox and Alberni, skirts the south shore of the harbour, Nanoose village is distant $2\frac{1}{2}$ miles from the harbour on the Alberni road, Nanoose village has postal and telegraphic connection with the rest of the Dominion, and is a station on the Esquimalt, Nanaimo branch of B.C. division of the C.P.R.

New Westminster Harbour, B.C.—is on the Fraser river just above the junction of the North arm, 17 miles in a general NE. direction from the entrance of the river. Along the New Westminster waterfront on the north bank, is good depth and good anchorage.

The Fraser river is navigable for vessels of 14 feet draught with ease for 30 miles above the entrance, and for 50 miles, if assisted by steam power and acquainted with the existing deep water channel, which, however, is subject to change. Steamers of light draught reach Hope, 80 miles up.



New Westminster Harbour.

Anchorage.—Vessels can moor abreast New Westminster in mid-channel, in $6\frac{1}{2}$ to 7 fathoms, sand and mud.

Harbour Commission.—The harbour is under a commission consisting of 3 commissioners, two appointed by Governor in Council, and one by Council of city of New Westminster, who report annually to the Minister of Marine and Fisheries.

Draw Bridge.—A bridge with a swinging span 325 feet long, giving a clearance of about 150 feet for passage up and down of ships, spans the river just above the city. There is a fixed white light at the upper and at the lower end of the draw protection. A fixed white light is also on the pier on the south side of the draw, showing down stream, and a similar light on the pier on the north side showing up stream.

Semaphore.—On the top of the swing span of the bridge is fitted for day and night signals.

Tides.—The mean rise of the tide at Fraser river entrance is $12\frac{1}{2}$ feet, the time of high water is irregular.

Ice.—The river at New Westminster seldom freezes over, loose ice comes down the river in early spring but without damage to ships.

Wharves.—At New Westminster there are 44 wharves, having an area of about 185,000 square feet, and in nearly every instance these wharves have sheds or warehouses for storage of freight. Nine of the wharves are for public use, all having sheds and railway sidings to ship's side. For a distance of 3 miles one railway runs along the inside ends of the wharves, and for 2 miles there are three railways having separate tracks and each having switches to various wharves.

The Schaake Works own a wharf and floating pontoon, water frontage 196 feet, depth of water 30 feet. The steam railway tracks pass along this wharf, and an electric railway in front of their works passes close to the wharf.

The wharfage frontage of E. J. Fader is 666 feet long, with 200 feet of the wharf built with switch lines on the inner side and one on the outer side, by which vessels load from and unload into cars or warehouses. Large warehouses are on this wharf, which will accommodate several shiploads of freight. The depth of water at the wharf front is 35 feet at low water.

The Fraser River Lumber Co. owns a lumber mill with large capacity for sawing, planing, etc., and a wharf with 30 feet of water.

The Royal City Planing Mills branch of the B.C.M.T. & T. Co. has a water front of 1,848 feet and a wharf; depth of water, 16 feet. The mills of this company are of large capacity, turning out large quantities of lumber, shingles, doors, windows, mouldings, etc., and the water frontage is largely used by the company.

The city water frontage in use at the present time includes the use of property occupied by the following companies: Small & Bucklin Lumber Co., water frontage, 500 feet; depth of water, 20 feet. Gilley Bros., 132 feet frontage, with coal bunkers and storehouses; depth of water, 30 feet. Dominion Government wharf, frontage, 264 feet, with storehouses; depth of water, 30 feet.



New Westminster Harbour, Plant of Canadian Western Lumber Co., Ltd.

Canadian Pacific Railroad wharf, water front, 330 feet, with warehouses; depth of water, 25 feet; British Columbia Electric Railway Co., water front, 264 feet, with freight sheds and tracks; depth of water, 25 feet. St. Mungo Cold Storage fish-freezing plant, depth of water, 30 feet. Columbia Cold Storage fish freezing and ice plant, Canadian Pacific Railway Navigation Co., water frontage, 399 feet; storehouse and freight sheds; depth of water, 30 feet. Myers & Preston, water front, 66 feet; coal bunkers; depth of water, 25 feet. Brackman & Ker Milling Co., 198 feet water front, hay and grain sheds; depth of water, 30 feet. V.W. & Y. Railway, frontage, 462 feet, with freight sheds; depth of water, 25 feet. New Westminster Fruit Packing Co., 198 feet frontage; depth of water, 25 feet. Butterfield & Co., fish-canning establishment, frontage, 66 feet; water, 25 feet. Packers' Association, fish canning, depth of water, 30 feet. Swanson & Co., boat sheds; depth of water, 25 feet. Monck & Co., 66 feet frontage; depth of water, 25 feet. V.W. & Y. Railway, frontage, 396 feet; depth of water, 25 feet; railway ferry to Vancouver Island. Myers & Preston, water frontage, 132 feet; sheds, storehouses, etc., depth of water, 25 feet. There is dockage at Port Mann of about 700 feet in length. The Canadian Lumber Co. has a mill with about 500 feet of dockage at the east end of the island. Many small Government wharves have been built along the river.

Industrial Features.—The Fraser River along its banks for a distance of about 20 miles, on both sides, and on the flat lands of its delta, offers innumerable sites for various industrial establishments, with from thirty to forty feet of water, as well as rail connection.

Among the numerous industries now located, are included sawmills, shingle-mills, wood working of all kinds, ship building, salmon canneries, fruit canneries, car building shops, paper mills, fertilizers, foundry and machine shops.

Improvements.—Work on the harbour improvements is going on steadily. A ship channel is maintained to the sea. The work on the jetty at the mouth of the river, now proceeding and largely completed, will cost over \$2,000,000.

In addition a contract has been let for the construction of a wing dam and protection work on one of the lower reaches of the river at a cost of over \$100,000. This work will be of great benefit in making the channel a permanent one.

The city of New Westminster owns two miles of its water frontage and a few years ago spent over \$500,000 in improving this frontage and providing wharf accommodation for vessels.

Dock—Slips.—A dry dock owned by Seaton Bros. is 130 feet long by 40 feet wide, and 4 feet on sill.

There are 3 patent slips. No. 1—Westminster Marine Co. length 350 feet, cradle 120 feet, width of cradle 36 feet, depth of water at foot of ways 15 feet at high water, lifting power 1,000 tons, motive power electric. No. 2—owned by Brunette Sawmill Co. one set of ways, 120 feet long, cradle 75 feet, width 30 feet, lifting power 200 tons, water 20 feet at high tide. No. 3—owned by Barnett & McDonald is 100 feet long, cradle 50 feet long, width of cradle 20 feet, lifting power 150 tons.

Repairs.—There are good machine shops and boiler works capable of carrying out ordinary repairs.

Shipbuilding.—The present plants are The Westminster Marine Railway Co., The Star Shipyard Co., and Queensboro Shipyards. These are mainly engaged in the building of scows, barges, and sea-going tugs, and in repair work.

Pilotage is under the New Westminster Pilotage authority, and the rates for the district are: (a) for vessels under sail, \$2 per foot draught of water and one cent per net registered ton. (b) for vessels in tow of a steamer, \$1 per foot draught and one cent per net registered ton. (c) for steamers, \$1 per foot draught of water and one cent per net registered ton.

Port Charges.—Are harbour master's and sick mariners' dues, and port wardens' when surveys are made.

Supplies of all sorts obtainable, and water from the city water works.

Coal.—About 500 tons of native coal usually kept in stock but any quantity can be got at short notice; vessels can coal from barges or alongside wharves.

Communication.—Connected with Vancouver by New Westminster and Vancouver Electric road, by the Vancouver, New Westminster and Yukon road, by the C.P.R. and by the Great Northern road to Drayton harbour and other places in the United States. The terminus of the last road is at Brownsville opposite New Westminster.

There is steamer communication by the Fraser route, and by the Royal City Navigation Co. to Chilliwack and intermediate ports 3 times a week, by the C.P.R. Navigation Co. weekly to Victoria, and by daily steamers to nearby places. Has telegraph connection with all parts, and telephone with Victoria.

The City of New Westminster, at the junction of the north arm with the Fraser river, on the north or right bank of the Fraser river, has more than doubled its population since 1901, and has developed a very considerable trade particularly in lumber and canned fish—has all the conveniences of a modern town—population in 1921, 14,495. In 1920, it had 111 industrial establishments, employing 1,792 hands; value of products \$13,188,776.

Trade.—The exports are lumber, canned and salted fish, farm produce, furs, and hides. The imports are chiefly tin plates, salt, cement, and iron. For the fiscal year 1921-22, the value of exports was \$4,199,788; of imports \$1,272,455.

Shipping.—During the fiscal year 1921-22, 973 vessels register tonnage 271,823 entered the port; 981 vessel, register tonnage, 273,181 cleared.

Lloyd's Agent.—A. Malins.

Ocean Falls Harbour, B.C.—is on the mainland at the head of Cousins inlet an extension of Fisher channel, which is an extension of Fitz Hugh sound. Cousins inlet running northerly turns to the eastward at David point, the south entrance point of the harbour.

The harbour maintains an average width of about half a mile from the entrance for about a mile to Ocean Falls at the head—is perfectly sheltered and 17 to 20 fathoms can be carried to within 300 yards of the wharves.

Link river emptying out of Link lake close eastward of the town, flows into the harbour head.

Light.—On David point, a white wood slatwork pyramid shows from a height of 26 feet above high water a red fixed light.

Docks.—Are four in number all on east shore of Cousins inlet; (1) Townsite dock, of wood, 290 feet long, and 200 feet wide, depth of water alongside 30 feet; area of warehouses 6,642 square feet. (2) Paper dock, 560 feet long, 760 feet wide, depth of water alongside 30 feet, area of warehouses, 58,000 square feet. (3) Derrick dock, 260 feet long, 40 feet wide, depth alongside 30 feet; no warehouses. (4) Sawmill dock, 330 feet long, 110 feet wide, depth alongside 30 feet, area of warehouses 4,200 square feet.

Vessels can dock at all these wharves in any weather. No. 1 dock has 2 tracks connected with industrial tramway, the other three have each 1 track.

All are electric lighted, all have hydrants laid on.

Dock No. 3 has a steam derrick, lifting capacity of 10 tons. Dock No. 4, an electric derrick, lifting capacity 25 tons.

Coal.—About 15,000 long tons of coal in stock; vessels coal alongside wharves, or at anchor from scows.

Oil.—In stock liquid fuel 40,000 barrels, other oils 15,000 gallons. Four inch pipe line for supplying vessels.

Water.—Laid on to docks—from Link lake—suitable for boilers and drinking.

Supplies.—Ordinary supplies obtainable from general store.

Port Charges.—Harbour master's dues, as per Canada Shipping Act, Chap. 113.

Communication.—C.P.R.-B.C. Lake and River service—Vancouver to Ocean Falls calls weekly—Union Steamship Co. from Vancouver and G.T. Pacific Coast Steamship Co. Ltd. from Prince Rupert also call.

The Village of Ocean Falls is built on both sides of the Link river at the head of Cousins inlet—has large pulp and sawmills, post office, hotel, school and general store.

Shipping.—During the fiscal year 1921-22, 965 vessels, register tonnage 494,641 entered the port; 966 vessels, register tonnage 506,312 cleared.

Pender Harbour, B.C.—NE. side of Malaspina strait, south of Agamemnon channel, is the only anchorage with moderate depth of water in the neighbourhood of Jervis inlet. Pearson island lies in the entrance from the westward, and about $\frac{3}{4}$ of a mile east of Pearson island is Williams island; between Williams island and Heney point to the northward is a reef, and the main channel to the harbour is between this reef and Heney point; it is $\frac{3}{4}$ of a cable wide with a depth of 11 to 12 fathoms. The harbour is about $1\frac{1}{2}$ miles long with three buoys on the north side and two on the south side.

Pender Harbour Settlement.—At Irvines Landing, at the entrance to the harbour, is an hotel and a post office, on one of the bays at south side of harbour is a settlement of Scotch fishermen, and 3 stores each with a government float. Fishing in salmon, cod and herring, especially the last is carried on, and it is a centre for the logging industry of Jervis inlet. The Union Steamship Co. from Vancouver calls daily.

Port Renfrew or San Juan, B.C.—is on Vancouver island on north shore of Juan de Fuca strait, near its western end.

From its entrance points, Owen point on the west and Observatory rocks on the east, the harbour runs in a northerly direction for $3\frac{1}{2}$ miles, with a width of $1\frac{1}{4}$ miles. There are depths of from 6 to 9 fathoms all over the harbour, mud and sand bottom.

Gordon and San Juan rivers flow into the head of the harbour.

Anchorage.—The port is open to SW. winds, and a heavy sea rolls in with moderate gales from that quarter the best anchorage is in 6 to 8 fathoms about $1\frac{1}{3}$ miles from the head.

Light—Buoy.—A black and white vertical striped light-and-whistle-buoy showing a white occulting light, is moored $5\frac{1}{2}$ cables S.E. of Owen point.

Tides.—At Port Renfrew springs rise 9 feet.

Wharf.—At Snuggery cove on east shore of harbour is a substantial wharf 900 feet long protected by a breakwater, the wharf has a depth of 15 feet alongside.

Port Renfrew settlement is at the head of the cove and comprises a hotel, store, telephone station and post office. C.P.R. coast service steamer, between Victoria, B.C. and Port Alice, B.C., calls from one to four times a month.

Shipping.—During the fiscal year 1921-22, 159 vessels, register tonnage 70,126 entered the port; 162 vessels, register tonnage 70,181 cleared.

Port Simpson Harbour, B.C.—On the mainland, the northernmost part of B.C. and near the international boundary—is the most spacious harbour on this part of the coast. Has an area of over 4 square miles with depths of from 10 to 25 fathoms, mud, and is free from dangers outside the 10 fathom contour line—is easy of access and well sheltered from all but westerly winds; the harbour gradually narrows towards its eastern end terminating in Stumaun bay. The length of the harbour from Inskip passage is about $3\frac{1}{2}$ miles.

The main entrance is from the westward through Inskip passage and between south end of Birnie island on the north, and the north extreme of Harbour reefs on the south, and is 4 cables wide with depths of 16 to 20 fathoms; a bank of 9 fathoms lies in the fairway.

The southern entrance to the harbour from Dodd passage is between One Tree islet on Village Island reef (Village island lying about 150 yards NW. of Hay point of Port Simpson, and connected with it at half ebb) on the eastward, and the southern extreme of Harbour reefs on the westward. It is $1\frac{1}{4}$ cables wide between the 5 fathom contour lines, but the western fairway has patches of 2 to 3 fathoms, and this entrance is unsuited to strangers unless properly buoyed, and is only fit for small vessels.

Village island off Port Simpson is a quarter of a mile long in a NW. and SE. direction and foul ground extends for nearly 3 cables NE. of One Tree islet, immediately NW. of it.

Harbour Reefs.—Harbour reefs covered at high water form a natural breakwater to Port Simpson, protecting the anchorage from NW. winds. They are about 1 square mile in extent with the depth of 5 fathoms.

Anchorage.—A good berth for large vessels off Port Simpson is in 14 fathoms about 450 yards northward of the head of the Hudson Bay Co.'s pier; smaller vessels may anchor closer in.

Tides.—Springs rise 19 feet, neaps $14\frac{1}{2}$ feet.

Beaching.—The somewhat large rise and fall of tide at Port Simpson permits the beaching of a vessel, and a good site will be found close to the east side of the Hudson Bay Co.'s pier head.

Lights—Buoys.—For description of lights and buoys in harbour and approaches, and further hydrographic information, see 1913 Admiralty "B.C. Pilot," Vol. 2, pages 114 and 115, covering chart No. 2426.

Directions.—See 1913 Admiralty "B.C. Pilot" Vol. 2, page 116, covering chart No. 2426.

Pier.—The Hudson Bay Co.'s pier at Port Simpson, with a short T at its head runs out 325 yards in a northerly direction over the flats off the shore; there is a depth of 15 feet at the east end of head of pier at low water. The pier is lighted by a small fixed red light at the east end of the cross head, and a fixed green light at the west end.

Supplies—Water.—Fresh meat and vegetables only procurable in small quantities; water procurable from stream on east shore of harbour.

Communication.—Postal and telegraph. Union Steamship Co. of British Columbia from Vancouver calls daily.

Port Simpson Settlement.—On shore of harbour eastward of Village island, is the site of an old Hudson Bay fort, and has a government hospital—post and telegraph offices—Episcopal and Methodist churches, and a large Hudson Bay Co.'s store. There is an Indian village and burying ground on Village island which is connected by a trestle bridge with Port Simpson.

Shipping.—During the fiscal year 1921-22, 147 vessels, register tonnage 62,627, entered and cleared the port.

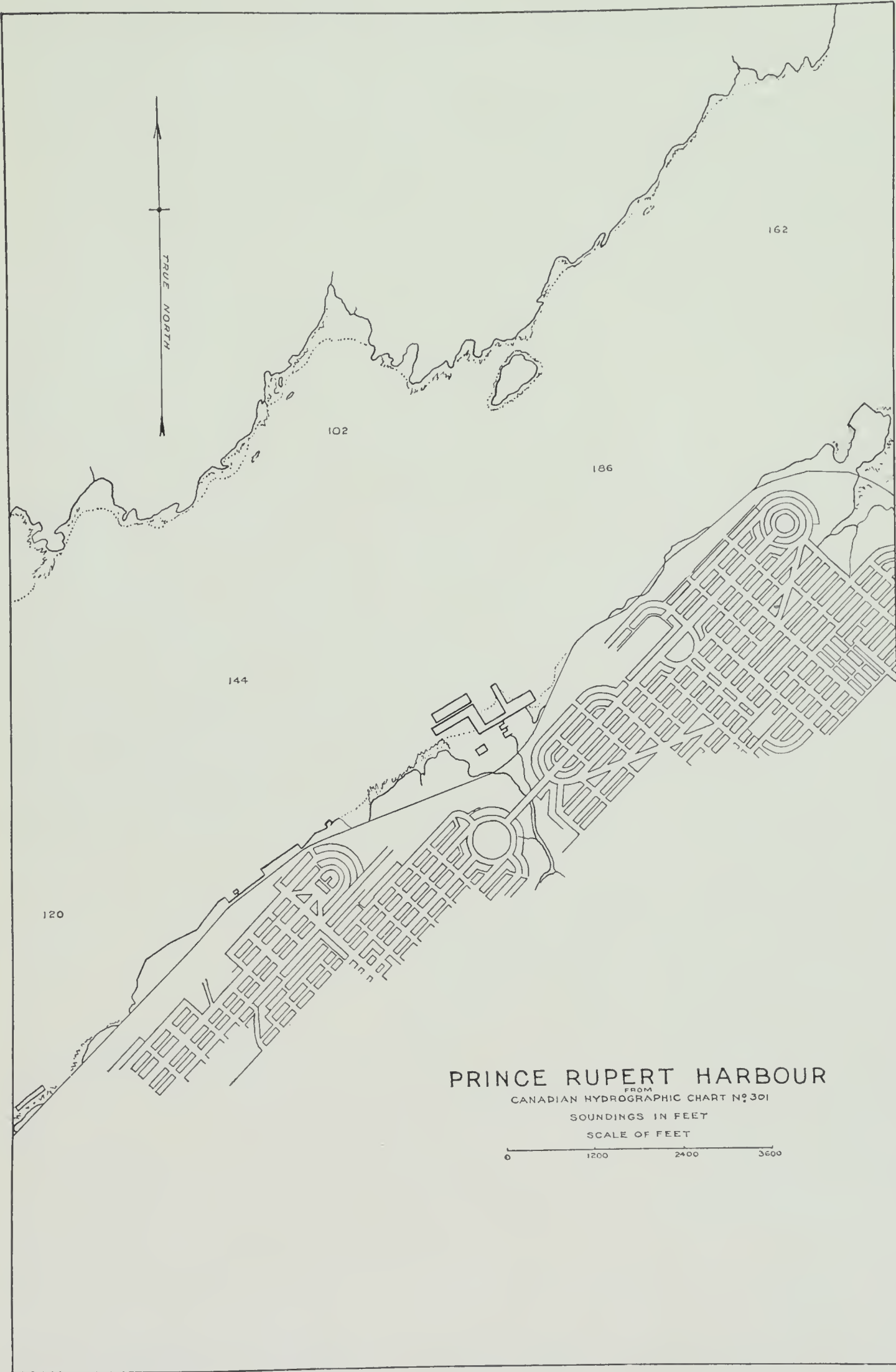
Powell River, B.C.—is $4\frac{1}{2}$ miles northward of Grief point, the NE. entrance point of northern entrance to Malaspina strait, the river is the outlet to Powell lake. Anchorage is to be had about one mile NW. of Powell river.

Piers.—The Powell River Paper Co.'s pier is built out on the SE. side of the river—400 yards long with L-shaped head, and depth of 27 feet at head—4 fathoms can be carried up to the pier between buoys placed by the company. Another pier lies close eastward of the main pier.

Powell River Settlement.—Is the headquarters of the Powell River Paper Co. who have here a large pulp and paper mill employing 1,000 hands; with hospital for the sick and a logging camp on Powell lake. Has postal and telegraph connection. Steamers of C.P.R., Vancouver, Powell river and Union bay route call. Union Steamship Co. of B.C. from Vancouver calls daily. G.T.P. Coast Steamship Co. from Prince Rupert also calls.

Shipping.—During the fiscal year 1921-22, 1,463 vessels, register tonnage 519,818, entered the port; 1,485 vessels, register tonnage 528,966, cleared.

Prince Rupert Harbour, B.C.—is entered from the NW. through Chatham sound, between Kinahan islands on the south and Lima point south point of Digby island on the north.



From the south the approaches are through the inside channels Grenville, Arthur passage, and Malacca passage, or through Hecate strait on the outside.

The entrance to the harbour lies between Lima point on the west and the shore of Kaien island on the east and is about $1\frac{1}{3}$ miles wide, it then runs in a generally northerly direction for about 3 miles to opposite Parizeau point on the west shore, the north point of Casey cove, where it takes a more easterly sweep past Pilsbury point and Prince Rupert on the south shore of the harbour.

The narrowest part of the entrance is at Casey point on the east shore a little south of Charles point on the west shore, the south point of Casey cove, where the width is less than $\frac{1}{2}$ a mile. From here to abreast the town, the harbour gradually widens and at Prince Rupert is about 1 mile wide.

Depths.—The approaches to Prince Rupert harbour are deep north and south of the town there is about 20 fathoms and 23 fathoms in the channel opposite the town, and about 26 feet at low water alongside the wharves.

Anchorage.—In the central part of the harbour the depths vary from 20 to 33 fathoms and in the fairway NW. of the town from 20 to 22 fathoms, but anchorage in more convenient depths may be found closer to the shores.

Lights—Buoys.—For a description of lights, buoys, and other aids to navigation in Prince Rupert harbour and approaches and further hydrographic information, see 1913 Admiralty "British Columbia Pilot," Vol. 2, pages 92 to 98 inclusive, covering charts Nos. 1737, 2453 and 3282, also Department's 1923 "List of Lights and Fog Signals on the Pacific Coast."

Directions.—See 1913 Admiralty "British Columbia Pilot" Vol. 2, pages 99 and 100, covering charts Nos. 2,453 and 3,282.

Tides and Tidal Streams.—In Prince Rupert harbour, springs rise $20\frac{1}{2}$ feet, neaps 16 feet. In the channel abreast Casey point the stream begins to run out at one hour after high water, the maximum velocity is from 2 to 3 knots.

Dry Dock.—The Prince Rupert dry dock is 600 feet long, by 100 feet wide, with lifting capacity of 20,000 tons. Foundry machine shops are operated in connection.

Imperial Oil Co.—The Imperial Oil Co. maintain a large supply of fuel oil at all times here. Their tanks contain 2,200,000 gallons fuel oil, 350,000 gallons gasoline, 360,000 gallons distillate, 83,000 gallons coal oil.

There is 25 feet of water alongside their wharf at low water which has a frontage of 300 feet just south of the dry dock.

Wharves.—The wharves at Prince Rupert have a 1,685-foot frontage, at various angles: The first angle, 320 feet; the second angle, 350 feet; the third angle, 475 feet; the fourth angle, 360 feet; the fifth angle, 180 feet.

The depth of water at all these sections is not less than 25 feet at low water and there are large wharves and warehouses, two coal docks with 100 and 150 feet frontage respectively are separate.

The Government wharf is 600 feet long with not less than 25 feet at low water.

Freight sheds and warehouses are located on these wharves; also fish houses do business there.

A new wharf, 860 feet long, 170 feet wide, with 35 feet of water alongside at low water, has been built by the Canadian National Railway Company and

has a warehouse upon it, 820 feet long, 148 feet wide, the walls 24 feet high. Electric hoists are now being installed and everything being completed within a month. The railway track is within two feet of its doors. This is one of the finest wharves and warehouses on the Pacific Coast.

The Department of Marine and Fisheries has at Charles point (Casey cove) a lighthouse depot, with wharves, piers, officers' quarters, stores, etc., from this depot the light and buoy service of northern B.C. are maintained.

Quarantine.—There is a quarantine station at Parizeau point with all necessary appliances; a wharf in connection with the station is 497 feet by 40 feet, with least depth of 30 feet longside.

Wireless Telegraph.—The station is on a hill 245 feet high above the quarantine station at Parizeau point. Call letters V.A.J. Range 250 sea miles.

Port Charges.—Port Wardens and Shipping masters' fees as per Canada Shipping Act. Freight handlers charges same as at Vancouver, operated by the Pacific Stevedore and Contracting Co.

Pilots.—Local pilots are available and meet ships at Triple island, Brown passage, also Langarra island and elsewhere upon call by wireless to Digby island.

Supplies.—All ships gear and supplies can be obtained wholesale or retail, and abundance of fresh water is to be had at all the wharves.

Coal.—Coal averaging 4,000 tons monthly is brought from the interior of British Columbia by Canadian National Railway and also from Ladysmith and Nanaimo averaging 1,500 tons monthly.

Communication.—Prince Rupert is the western terminus of the Canadian National System.

The Pacific Coast Steamship Co's vessels from Seattle to Alaska, via Vancouver call 6 times monthly. Northern Steamship Co. of British Columbia twice a month. Grand Trunk Pacific Coast Steamship Co. from Seattle, Victoria, and Vancouver weekly. Canadian Pacific Railway Co's Steamship from Victoria via Queen Charlotte islands calls twice a month.

The City of Prince Rupert, on south side of harbour, is built between Pilsbury point on the S.W. and Ritchie point on the N.E.—on Kaien island, Ritchie point being the turning point of the harbour into Shawatlan passage to the southward. The city contains: courthouse, post office, hotels, and public buildings. In 1921 the population was 6,393, and in 1920 it had 45 industrial establishments employing 1,063 hands, value of products \$4,327,126.

Trade.—The port has a large export trade particularly in fish, coming next to Vancouver among British Columbia ports in the value of its exports. For the fiscal year 1921-22, value of exports \$7,021,735, of imports \$1,372,881.

Shipping.—During the fiscal year 1921-22, 4,004 vessels register tonnage 653,397 entered the port; 4,067 vessels register tonnage 630,295 cleared.

Lloyd's Agent.—John Barnsley.

Quatsino Narrows, B.C.—Quatsino sound on south shore of Vancouver island, and about 28 miles southeast of its NW. end, cape Scott trends from its entrance 20 miles in a NE. direction to Quatsino narrows, which connect the sound with West arm to the west, and Rupert arm to the northeast.

The narrows are 2 miles long in a northerly direction, and $1\frac{1}{2}$ cables wide in the narrowest part, with high rocky shores, and depths of from 12 to 20 fathoms.

Hecate Cove.—Close westward of the south entrance to the Quatsino narrows trends in a northerly direction for about two-thirds of a mile, is from 2 to 3 cables wide, and affords good anchorage near the centre in 10 fathoms mud.

Tides.—Springs rise 11 feet in Quatsino sound.

Light.—On southeast end of Entrance island at the northwest entrance of Quatsino sound, a red octagonal iron lantern on red roof of white square wooden dwelling shows 89 feet above high water a white fixed light.

Hand fog horn attached.

Settlement.—On west shere of Hecate cove is a Norwegian settlement, with store and post office, and a wharf with depth of 18 feet alongside.

Shipping.—During the fiscal year 1921-22, 100 vessels register tonnage 64,890 entered the port; 101 vessels, register tonnage 78,402 cleared.

Sidney Harbour, B.C.—on Vancouver island, on east side of Saanich peninsula, near its north end, at NW. end of Sidney channel, lies between the NW. spit of Sidney island and mainland of Vancouver island, about 2 miles apart.

There is good anchorage about half a mile southward of the government wharf at Sidney, and 3 to 4 cables off shore in from 8 to 10 fathoms, sand and mud, but vessels usually go to the anchorage off the wharves, where there are depths of $3\frac{1}{2}$ to $5\frac{1}{2}$ fathoms.

Wharves.—The railway wharf about 500 feet long with 23 feet water at end is somewhat dilapidated, a new wharf is proposed.

North of the railway wharf is the government wharf, 500 feet long with T head, and depths of 12 to 16 feet alongside, and storehouse.

To the northward of the government wharf is a pier, 400 feet long with 4 feet at end, near which is a saw-mill with conspicuous chimney.

Communication.—Postal and telegraph, and connected with Victoria, B.C., by Patricia bay line of Canadian National system.

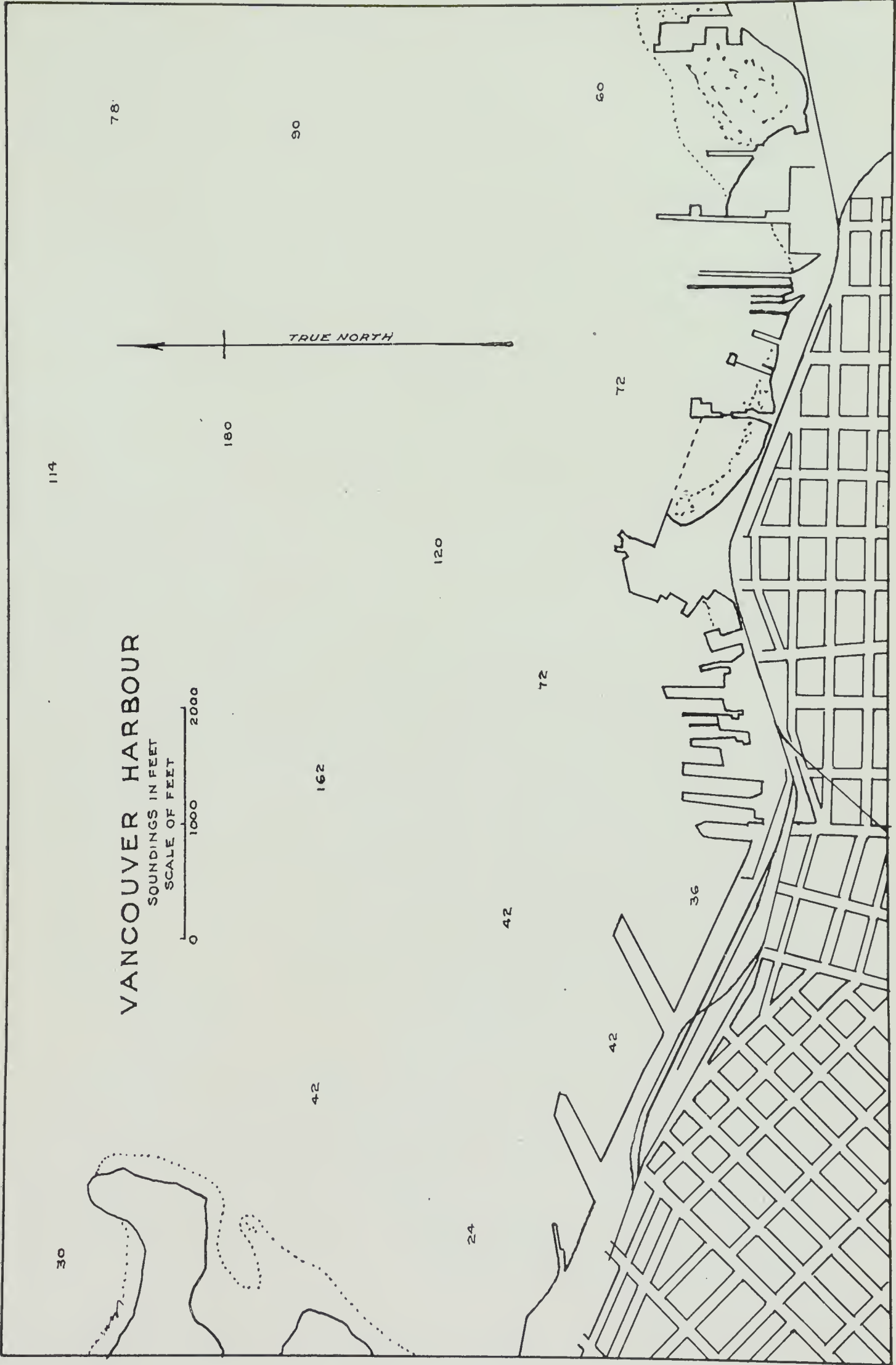
Shipping.—During the fiscal year 1921-22, 259 vessels, register tonnage 54,660 entered the port; 263 vessels, register tonnage 81,556 cleared.

Steveston, B.C.—lies on the north bank of the Fraser river about half a mile eastward of Garry point, and extends along the bank of the river for about one mile, in the narrow channel between Steveston and the bar lying off it, is sufficient depth of water at all times of tide for large vessels to lie alongside the wharves.

Steveston is an important salmon canning centre and has extensive salmon canneries and wharves.

Communication.—Postal and telegraph; on B.C. electric road Vancouver to Chilliwack; port of call for local steamers on New Westminster, Vancouver, Ladner and Steveston route.

Shipping.—During the fiscal year 1921-22, 411 vessels register tonnage 14,112 entered the port; 458 vessels register tonnage 14,313 cleared.



Stewart, B.C.—is on the Portland canal close to the 56th parallel. There is a wharf called the New wharf in contradistinction to the old one much dilapidated and little used. The New wharf is 300 feet long by 60 feet average width, and with good depth of water alongside.

Communication.—Stewart, Skeena district, has postal and telegraph connection with the rest of the Dominion—is a terminal of Canadian North Eastern Railway, Stewart to Redcliffe.

Grand Trunk Pacific Coast Steamship line from Prince Rupert makes it a port of call.

Shipping.—During the fiscal year 1921-22, 145 vessels register tonnage 64,811 entered the port, 172 vessels register tonnage 82,840 cleared.

Union Bay Harbour, B.C.—on east coast of Vancouver island and on west side of Bayne's sound, 11 miles NW. of Yellow island at the sound entrance—is the shipping port for coal brought from the mines of the Canadian Collieries, Ltd., who have a hydro electric plant of 12,000 h.p. of which 4-000 h.p. is absorbed by the mining plant, leaving 8,000 h.p. available for other purposes. A spur railway 14 miles in length connects the harbour with the mines.

Buoy.—The end of the spit off Union point immediately northward of the wharves is marked by a platform buoy topped by pyramidal black slatwork.

Anchorage in 10 to 12 fathoms is eastward of the wharves near a mooring buoy.

Wharves.—The coaling wharf 700 feet long has 27 feet at low water at its outer end, it can accommodate any deep sea ship. Coal can be loaded at rate of 300 tons per hour.

There are 2 freight wharves—one Government owned and one privately owned, capable of handling any coastwise ships.

There is a landing pier in Union bay south of the wharves, and abreast one of the hotels, with 12 feet water at the end.

Port Charges.—Are harbour master's dues, payable twice a year, and sick mariners' dues collected three times a year if not paid elsewhere.

Pilotage.—Non-compulsory.

Supplies.—Good water is piped to the wharves and the firm of Fraser and Horne handle stores for coastwise and deep sea ships.

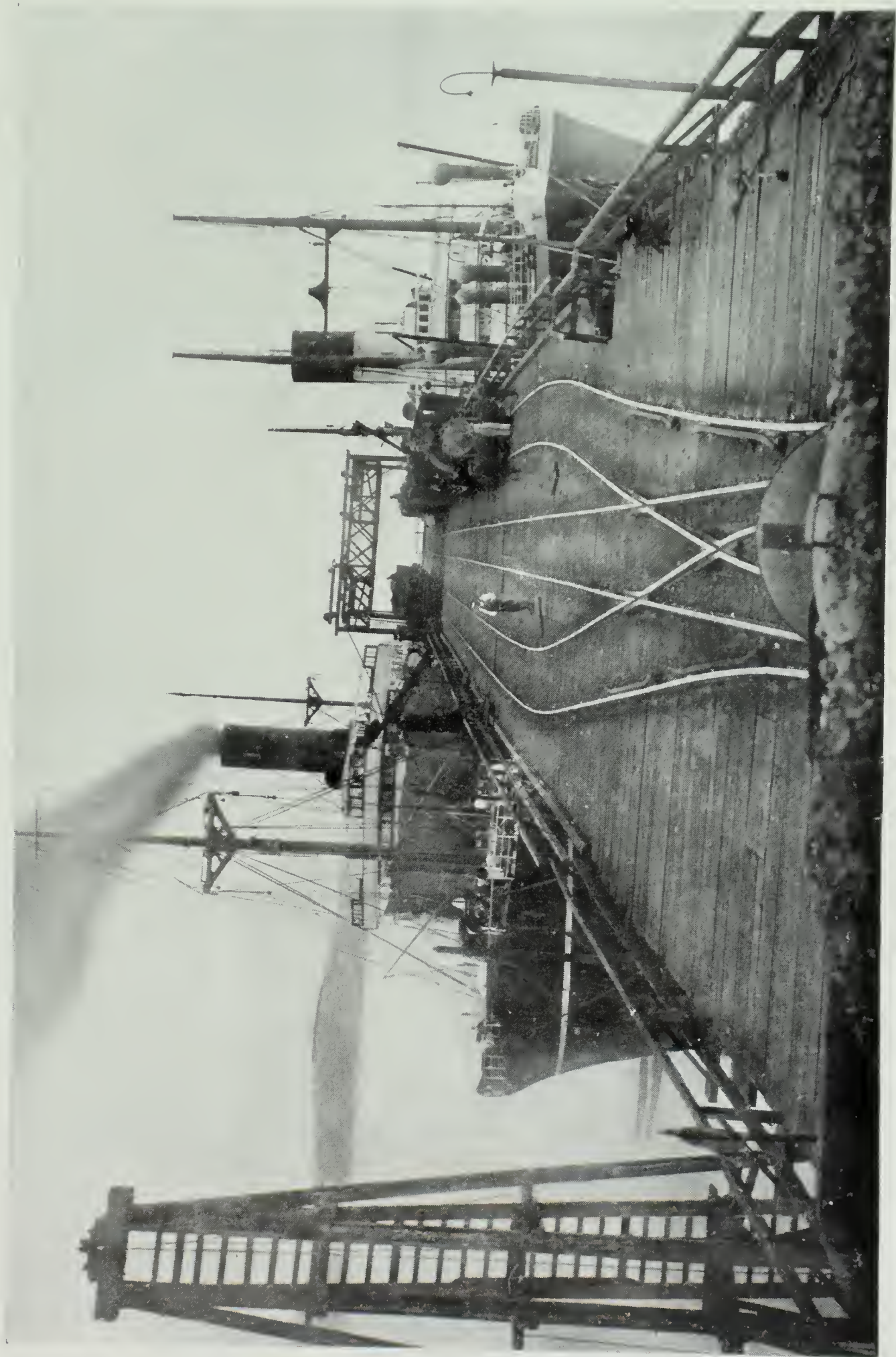
Repairs.—There is a gridiron on which repairs to small vessels can be made.

Communication.—Union bay has post and telegraph office and is a station on the Esquimalt and Nanaimo railway, a branch of the C.P.R.

Is on the Vancouver-Powell River-and Union Bay route of the C.P.R.—British Columbia Lake and River Service steamers. Has two hotels.

Shipping.—During the fiscal year 1921-22, 1,057 vessels, register tonnage 361,113, entered the port; 1,133 vessels, register tonnage 683,177, cleared.

Vancouver Harbour, B.C.—is on the east shore of the strait of Georgia on the British Columbia mainland, and is entered from English bay the NW. point of which is Atkinson point, and the SE. point Grey point, about $3\frac{3}{4}$ miles apart, and this width is approximately maintained to the mouth of First narrows or Lions gate.



Union Bay, B.C.

The harbour of Vancouver is just inside the First narrows and south of Brockton point. From between the entrance points of English bay to Prospect point, the south entrance point of First narrows, is about 5 miles, the depths varying from 60 fathoms at the entrance of the bay to 6 fathoms off Prospect point.

First narrows, the entrance to Burrard inlet, between Prospect point and the mouths of the Capilano river to the northward, has a channel width of about 1 cable with depths of from 12 fathoms; abreast of Brockton point about $12\frac{1}{2}$ cables SE. of Prospect point the inlet has a width of close to half a mile, and off the middle of the harbour front of Vancouver of $1\frac{1}{2}$ miles, it then gradually narrows to the Second narrows, about $3\frac{3}{4}$ miles eastward of Brockton point, where the breadth of the channel varies from $1\frac{1}{2}$ cables at the narrowest part to 2 cables at half a mile on either side, with fairway depth of 12 fathoms. It then continues in a N. by E. direction for about $3\frac{1}{2}$ miles to the promontory separating Port Moody arm on the SE. and Indian arm on the NW. with depths in the channel which widens out after the Second narrows is passed, of from 10 to 30 fathoms. The narrowest part of the entrance to Indian arm is about 2 cables wide, to Port Moody about the same.

Burnaby shoal, about $\frac{1}{4}$ of a mile eastward of Brockton point, has a least depth of $1\frac{1}{2}$ fathoms on it but otherwise the water is deep all along the harbour front, and depths of $3\frac{1}{2}$ fathoms and more can be carried alongside the wharves.

Parthia shoal, in the mid channel of the First narrows, NW. of Brockton point, has least depth of 29 feet over it.

Port Moody.—The entrance to this snug harbour is 4 miles eastward from Second narrows. It is about 3 miles in length, and varies in breadth from 600 yards to $\frac{1}{2}$ mile, except at its entrance, where it is only 400 yards across; there are no known dangers, and there is a depth of 4 to 8 fathoms, good holding ground. The port terminates in a muddy flat at its head, which is within 3 miles of the banks of Pitt river.

False Creek.—Runs in from English bay, immediately to the southward of the city of Vancouver, at first in a SE. and then in a NE. direction along practically the entire southern part of the west portion of the city.

Harbour Commission.—The harbour is under a commission consisting of three commissioners appointed by Governor-in-Council, secretary and chief engineer, who report annually to the Minister of Marine and Fisheries.

Harbour Regulations.—Speed—The speed of any vessel or ship entering or leaving the harbour shall not exceed between Prospect bluff and Brockton point twelve knots an hour.

The speed of such ship or vessel, so entering or leaving the harbour, shall not exceed seven knots an hour after passing an imaginary line between Brockton point and the burner at Heap's sawmill, when within one mile from any wharf or pier.

Tows.—No tug with a tow astern, entering Vancouver First narrows, from either end, shall pass either Prospect bluff or Brockton point at a lesser distance than one-quarter of a mile from a preceding tow.

Boom of Logs.—No boom of logs shall exceed the limit of 2,200 feet in length by a breadth of 80 feet, or of 1,200 feet in length by a breadth of 160 feet.

Shortening Hawsers.—All tugs or vessels towing other vessels or logs shall, before entering the narrows, shorten their hawsers to thirty fathoms.

Anchorage.—The best anchorage is between Brockton point and the Canadian Pacific Co.'s wharf in $6\frac{1}{2}$ to 7 fathoms. There is anchorage off the city wharf in 9 fathoms. Coal harbour the west end of Vancouver harbour, inside Deadman's island close south of Brockton point affords shelter to small craft and boats in depths of from 3 feet to 3 fathoms; the channel is marked on either side by spar buoys.

Lights.—On point Atkinson, a white, hexagonal reinforced concrete tower shows 108 feet above high water a white group flashing light. Diaphone in connection with this light.

On Prospect point, a white, square, wood tower shows 28 feet above high water a white, red sector occulting light. Fog bell attached.

On Brockton point a square, reinforced concrete tower shows 40 feet above high water a red, white sector, fixed light. Fog bell attached.

On N.W. corner of Canadian Pacific Railway pier D is an electric red fixed light, and on the N.E. corner a green fixed electric light. Fog bell on north end of pier.

Beacon.—On north shore of west entrance of First narrows, a beacon shows 25 feet above high water a white occulting light. Diaphone attached.

On north edge of channel, First narrows, 5.6 cables, $332^{\circ} 15'$ true from Brockton point light, a pile dolphin shows 12 feet above high water a white occulting light. Fog bell attached.

On Burnaby shoal, lantern and bell on tripod on wooden platform shows 14 feet above high water a red fixed light. Fog bell attached.

Buoy.—About $1\frac{1}{4}$ miles 357° true from Grey point, a red steel cylindrical gas and bell buoy shows a white occulting light.

Pilotage is non-compulsory.

Tides.—At Vancouver rise 13 feet springs, 11 feet neaps. Tidal streams at the narrowest part of the channel at First narrows run from 4 to 8 knots, eddies form in First narrows, when tidal streams are running in any strength, and heavy draught vessels should exercise caution when going through.

Port Charges are sick mariners' and harbour master's dues as regulated by the Canada Shipping Act.

WHARVES AND PIERS

The wharves in Vancouver harbour along the city front are: The Canadian Pacific Railway, main wharf, having 2,800 feet berthing accommodation and 270,100 square feet area. For a distance of 1,160 feet the depth of water is 27 feet at low tide and 40 feet at high tide; for a distance of 1,640 feet the depth of water is 23 feet at low tide and 36 feet at high tide. The company owns 5 freight sheds, with an area of 136,510 square feet. They have also a transfer slip, at present handling barges of 12 cars capacity each. The business can be increased by employing more barges.

The means of loading and unloading employed are generally by ship tackle and trucking, and 1 derrick of 30-tons capacity, for loading direct from cars to ships. Railroad tracks are adjacent to all sheds.

The Canadian Pacific new wharf, with 1,500 linear feet of berthing, 126,000 square feet of area, and shed of 33,000 square feet. The depth of water alongside the wharf is 30 feet at low tide and 40 feet at high tide.

Canadian Pacific Railway Pier: The western face of pier "D" starts where the western side of Granville street, produced on a bearing of 45° , intersects the old wharf line, and extends out from this point 928 feet on a bearing 60° , thence to the eastern side of the pier on a bearing 109° .

The pier is 160 feet wide and is built on a foundation of creosoted piling.

On the southern portion of the pier there is a two-story building, 136 feet by 275 feet, containing offices, waiting rooms, etc., on the remainder of the pier there is a one-storey freight shed.

A depressed track runs through the middle of the pier to within 120 feet of the northern end; and a track at deck level runs outside the freight shed on its eastern side for the full length of the pier.

The least depth of water on the eastern side of the pier is 33 feet, and on the western side, 25 feet.

The Johnson wharf, to the eastward of the Canadian Pacific wharves, is 550 feet long and has a storage capacity of 4,200 tons.

The Evans-Coleman wharf has a surface area of 169,540 square feet. Depth of water at high tide, from 36 to 57 feet; at low tide, from 20 to 41 feet. The number of sheds on the wharf is 13, and the area of floors is about 150,000 feet. A railroad siding runs to the end of the westerly arm of the wharf and cargo can be loaded into and out of steamers directly from the cars.

The MacDonald Marpole Co. Ltd. own bunkers, capacity about 600 tons, and two coal sheds of 2,000 tons capacity.

The Union Steamship Co. leases a wharf from the Canadian Pacific which has a surface of 59,500 square feet. Depth of water alongside is from 36 to $12\frac{1}{2}$ feet at low tide. On the wharf are four sheds, area of floors, 24,450 feet. There is a railway siding to one shed.

To the eastward of Messrs. Evans, Coleman & Evans wharf is the Grand Trunk Pacific Railway wharf; length 550 feet; width 100 feet; shed, 500 by 60 feet; capacity 25,000 square feet; also oil fuel storage of 32,000 pounds and tank measurement of 10,000 barrels, built with reinforced concrete wharves. Delivering capacity 1,000 barrels per hour.

At Hastings sawmill large piers accommodate vessels loading lumber, the largest having a depth of water alongside of 25 feet.

About $\frac{1}{4}$ mile eastward of the Hastings sawmills are the Great Northern Railway wharves, of large size, built of concrete to accommodate the largest class of ocean liners.

The British Columbia Sugar Refinery Co. has wharves for the accommodation of its trade and is building new wharves eastward of the existing ones.

At Barnet the chemical works own wharves for large vessels.

At Port Moody is the oil refinery wharf, used by the largest class of tank steamers, and wharves for the lumber trade at this place.

There is a ferry wharf at North Vancouver, and constant communication is kept up by ferryboats between this wharf and the ferry wharf on the Vancouver City side.



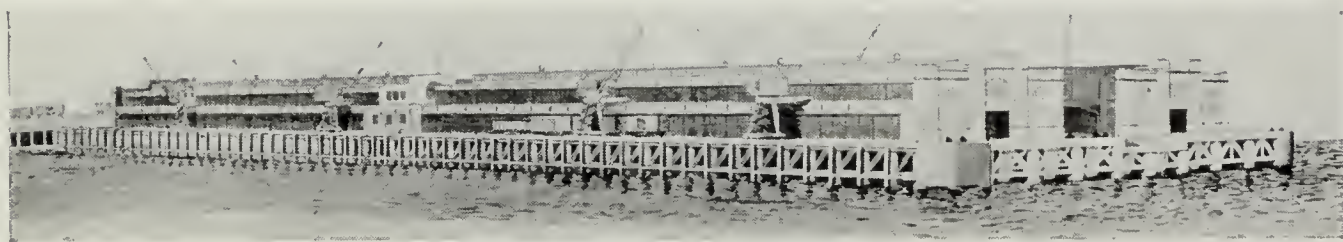
Vancouver Harbour, Main Water Front

The Vancouver Creosoting Company has a wharf about 870 yards long on the north shore.

The berthing accommodation in the port for deep sea vessels is 16,100 feet with a wharf area of 1,004,890 square feet. On the completion of the Ballantyne pier and the new Canadian Pacific Railway's pier "BC" there will be added to this accommodation 5,200 feet of berthing space with a further wharfage capacity of 772,200 square feet.

BALLANTYNE PIER

Is now under construction, and will probably be built with superstructure complete by the midsummer of 1923. Is situated between the Great Northern pier and the Hastings sawmill, is 1,200 feet long by 340 feet wide, and consists of central gravel fill with a concrete deck carried on reinforced concrete cylinders on either side. Upon it will be 4 two-storey transit sheds, 110 feet wide each, two car tracks on each side between the edge of the pier and the shed fronts, and 3 tracks and a roadway in the centre of the pier between the two sheds.



Ballantyne Pier, Vancouver, B.C.

When the pier is completed it is proposed to install a freight car ferry service between the pier and the north shore of Burrard inlet, where extensive flats are suitable for industrial sites.

The completion of this pier will augment considerably the harbour facilities.

Shipbuilding.—The principle shipbuilding industries at the port are (1) the Wallace Shipyards & Drydock Company, Limited, situated on the north shore of Burrard inlet, which operates one deep-sea way and two coastwise ways. This company constructs vessels of all sizes from tug boats to ocean freighters and has facilities capable of hauling out vessels for repairs up to 2,500 tons dead weight capacity.

(2) J. Coughlan & Sons Limited, situated in False creek has a plant containing three deep-sea marine ways on which vessels up to over 8,000 tons can be constructed.

(3) The B.C. Marine Engineers & Shipbuilders Limited, situated on the south side of Burrard inlet, has a plant consisting of two ways for coastwise vessels. These ways have a capacity of 1,800 tons deadweight.

Ship Repairs.—At the eastern end of the city, the British Columbia Salvage Company has a marine railway where vessels are hauled out and necessary repairs made.

There is a small slip for tugs, etc., in False creek.

Patent Slips.—At Cedar cove, 1 mile eastward of Hastings sawmills, is a patent slip, length of cradle 250 feet, depth on sill forward 14 feet, lifting power 1,500 tons. At Wallace shipyards, a slip, length of cradle 249 feet, depth on sill forward 12 feet, lifting power 1,700 tons.

Tugs.—Powerful steam tugs are available for towing vessels between Juan de Fuca strait and Burrard inlet.

Facilities.—Along the south shore of Burrard inlet there is approximately 15 miles of trackage which connects up with practically all the deep-sea berthing. The Canadian Transcontinental Railways entering Vancouver are Canadian Pacific, Canadian Northern and Grand Trunk Pacific while the American railways doing business at the port are the Great Northern, Northern Pacific and Chicago, Milwaukee & St. Paul.

Loading and unloading is mostly done up to the present time by ship's tackle and trucking. When the new Ballantyne pier is completed, most up-to-date facilities for loading and unloading cargo will be installed such as electric cranes, tractors, trailers, elevators and escalators.

Industries.—One of the most important industries is lumber. There are twenty-two lumber and shingle mills at Vancouver, tributary to this, of course, is the logging business; for the year 1922, 217,175,229 f.b.m. of lumber and logs were exported.

Another valuable natural industry is the fishing. There are some very large fishing companies at the port with an individual annual output running as high as 28,000,000 pounds of fish.

The grain business at the port of Vancouver has rapidly increased in the last two years. The present government grain elevator has a storage capacity of 1,250,000 bushels which is to be increased to approximately 2,000,000 bushels and the construction of another elevator of 1,500,000 bushels storage capacity is contemplated.

Among other industries at the port are five steel, iron and machinery plants, two oil refineries, three ice and cold storage plants, creosoting works, sugar refinery, milling and grain companies, roofing companies, chemical works, brick and tile manufacturers, etc.

False Creek Industries.—About 400 acres in the east part of False creek have been reclaimed, and here are the terminals, yards and depots of the Canadian National Great Northern and Northern Pacific Railways, and a considerable area of industrial sites.

Granville island, at western end close inside entrance, has 40 acres of reclaimed land on which are situated industries of various sorts including boiler, chemical and lead and paint factories, sawmills and electrical works.

The remaining part of False creek comprises about $1\frac{1}{2}$ square miles. On the north shore are the storage yards of the Canadian Pacific Railway, shingle, saw and planing mills, and the south shore is sown with lumber, shingle and planing mills, sash and door works, and engineering and machinery works.

Three of the most important industries on south side of False creek are The Vancouver Lumber Co. Ltd., with dry kilns, planing mills, etc. The Vancouver Engineering Works comprising iron, steel, and brass foundries, pattern, blacksmith, and welding shops etc., and The Vancouver Machinery Depot, with

shops and premises equipped to handle locomotives, logging machinery, etc., has a 20-ton crane and railroad loading pier.

On both the north and south sides of False creek are numerous wharves in connection with the industrial plants.

Coal is obtained from Nanaimo and Union on Vancouver island, the supply is unlimited, about 1,000 tons in stock. The Macdonald Marpole Co. have two coal sheds of 2,000 tons capacity.

Fuel Oil.—At Coal harbour the Canadian Pacific Railway have large tanks for the storage of oil fuel for their own use. The tanks have a capacity of 50,000 barrels each.

Supplies.—Of. all kinds can be obtained, and water from pipes laid to all the principal wharves brought from hills some 20 miles distant and remarkably pure.

Cable.—A telephone cable crosses the harbour from Vancouver to North Vancouver.

Storm Signals are shown from a mast on Brockton point.

Time Signal.—A time gun on Brockton point is fired daily at 9 h. .0 m. p.m. Pacific standard mean time corresponding to 17 h. .0 m. Greenwich mean time by electricity from McGill College Observatory, Montreal.

OVERSEAS STEAMSHIP LINES TRADING FROM VANCOUVER WITH THEIR ROUTES

Blue Funnel Line.. . . .	Japan, China, Philippines.
Blue Star Line.. . . .	
Canadian National Mercantile Marine..	Australia, New Zealand, United Kingdom.
Canadian Australian Royal Mail.. . .	Australia, New Zealand, Hawaiian Island.
Canadian Pacific Steamship.. . . .	
Canadian Government Merchant Marine.	European ports.
Canadian Pacific Ocean Services.. . .	Japan, China, Philippines, Straits Settlements.
Canadian Robert Dollar Co.. . . .	Japan, China, Philippines.
Cicle Transatlantique.. . . .	
Eliman Wilson Line.. . . .	
Frank Waterhouse & Co.. . . .	Japan, China, Straits Settlements, B.C. Ports, Puget Sound.
Furness Prince Line.. . . .	
General Steamship Corporation.. . .	Liverpool, London, Glasgow.
Harrison Direct Line.. . . .	
Holland Amerika.. . . .	New York, United Kingdom.
Isthmian Steamship Line.. . . .	
Java Pacific Line.. . . .	
Johnston Line.. . . .	
Kingsley Navigation Co.. . . .	
Luchenbach Line.. . . .	
Latin American Line.. . . .	
Mitsui & Company.. . . .	
McCormack Line.. . . .	Japan, China, Phillipines.
Nippon Yusen Kaisha.. . . .	
North Atlantic and Western Steamship..	Japan, China, Phillipines.
Osaka Shosen Kaisha.. . . .	
Pacific Argentine & Brazil Line.. . .	
Pacific Australasian Line.. . . .	
Pacific Mediterranean Line.. . . .	
Pacific Carribean Gulf Line.. . . .	
Royal Mail Steamship Packet.. . . .	



Vancouver Harbour

Suzuki & Company..
 Société Générale de Transport Mari-
 time à Vapeur.. Pacific Mediterranean service.
 Transoceanic Line..
 United American Line..
 Waterhouse Line..
 Williams Line..
 Yamashita Kasen Kaisha..

COASTWISE STEAMSHIP LINES TRADING FROM VANCOUVER
 WITH THEIR ROUTES

Admiral Line.. Puget Sound, California.
 Border Line Transportation Co.. . . . Puget Sound.
 Canadian Fishing Co. Sea Fisheries.
 Canadian Pacific Coast Steamship Ser-
 vice.. B.C. Ports, Puget Sound.
 Coast Steamship Co.. B.C. Ports, Puget Sound.
 Coastwise Steamship Co.. B.C. Ports, Puget Sound.
 Grand Trunk Pacific Coast Service Co.. B.C. Ports, Puget Sound.
 New England Fishing Co.. Sea Fisheries.
 Taylor Management Corp.. B.C. Ports, Puget Sound.
 Terminal Steam Navigation Co.. . . . Howe Sound.
 Union Oil Co. California.
 Standard Oil Co.. California.
 Union Steamship Co.. B.C. Ports.

Communication.—Trains leave twice daily for Montreal and other towns on the Canadian Pacific Railway and on the Great Northern and Canadian Northern systems, and there is also direct communication by rail with Seattle, Tacoma, Portland, San Francisco, and other places in the United States.

There is an electric railroad to New Westminster; also the Vancouver, New Westminster & Yukon Railroad.

Steamers run daily to Victoria and Nanaimo, on Vancouver island, and the ports in Puget sound and every few days to other places in British Columbia.

There is telegraphic communication with all parts of the world.

City of Vancouver built on south side of Vancouver harbour, is the commercial capital of British Columbia, was incorporated as a city in 1886, and the name changed at the suggestion of Sir Wm. VanHorne from Granville to Vancouver. Has large industries, wholesale houses, and financial institutions and an extensive timber trade with foreign ports. Is the forwarding point for large consignments of overland goods of all sorts. There are a number of conspicuous churches and the Court house has a conspicuous dome surmounted by a figure representing justice. Is the seat of McGill University college, has 2 high schools, and 15 public schools.

In 1920 Vancouver had 1,065 industrial establishments employing 24,674 hands, value of products \$98,689,520. In 1921 the population was 117,217.

Trade.—For the fiscal year 1921-22, value of imports \$48,235,845; of exports \$42,367,051.

Shipping.—During the fiscal year 1921-22, 11,471 vessels register tonnage 6,112,619 entered the port; 9,610 vessels register tonnage 6,271,183 cleared.

Lloyd's Agent.—C. Gardner Johnson.

Lloyd's Surveyor.—Evan Edwards, 801-2, Yorkshire Building.

Victoria Harbour, B.C.—is at the SE. end of Vancouver island, and east end of Juan de Fuca strait. Sea going ships inward and outward bound pass through Juan de Fuca strait. Vessels bound from Victoria to ports on N.E. side of Vancouver island, or on the B.C. mainland pass into the strait of Georgia through Haro strait, or the inner channels, Baynes, Swanson, and Active pass.

The entrance points of Victoria harbour are Ogden point on the east and McLoughlin point on the west, half a mile apart. The entrance though somewhat narrow permits ocean-going ships to enter the outer harbour and berth at the two docks with general depth of 33 feet known as the Ocean docks.

The harbour is divided into 3 parts; the outer harbour, the inner harbour trending eastward from Shoal point and including James bay and the part northward to the bascule railroad and traffic bridge, and the upper inner harbour between the bascule bridge and Point Ellice bridge crossing from Esquimalt road to Bay street on east side.

Depths.—Twenty feet throughout the entrance channel and harbour—wharves in entrance 26 to 33 feet alongside.

Special Harbour Regulations for Victoria:—

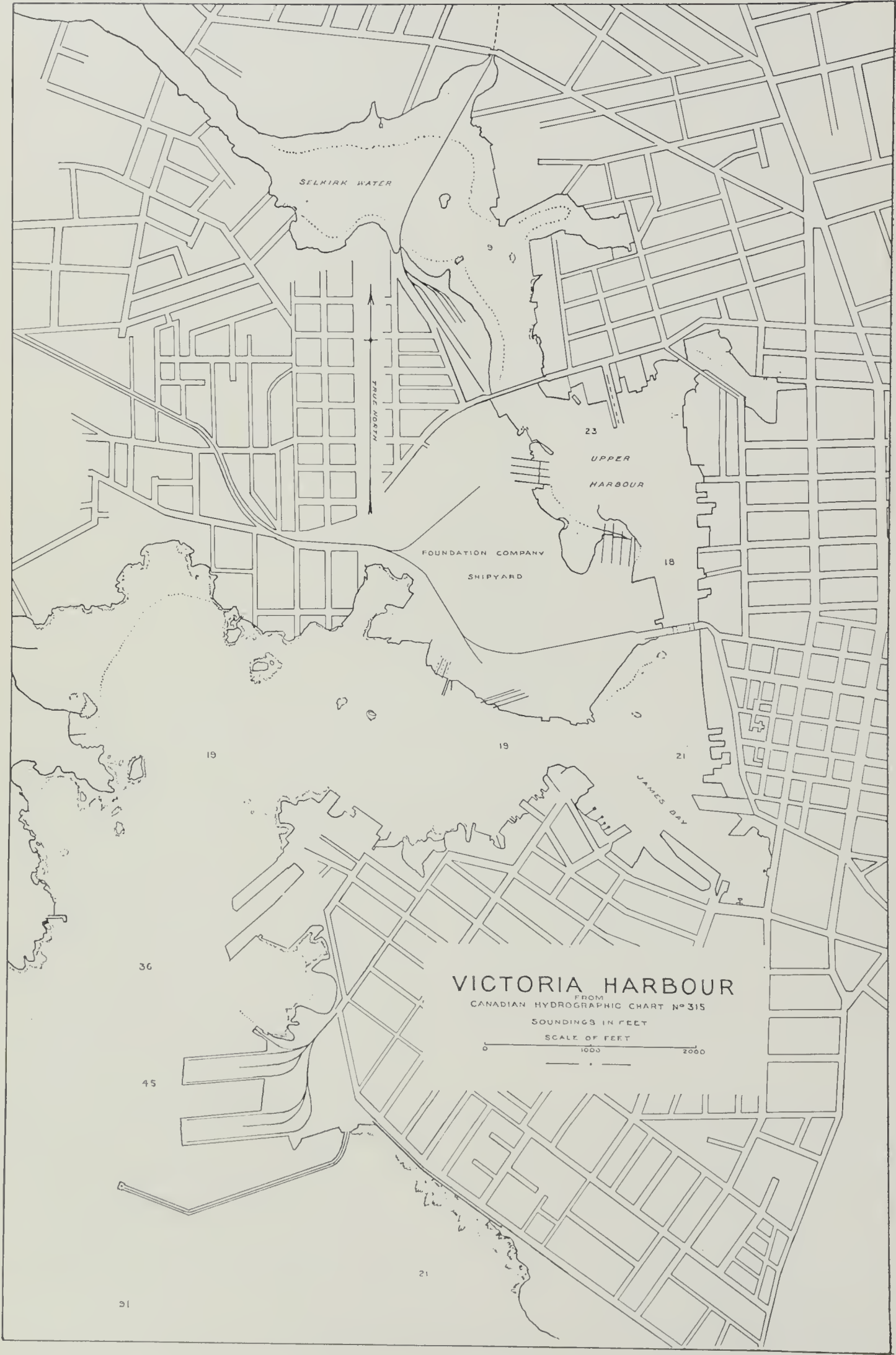
Anchorage.—No part of the harbour of Victoria, British Columbia, situate between the Railway bridge and the shores of James bay shall be deemed to be an anchorage for vessels, and vessels anchoring in this part of the harbour may do so only as a temporary expedient, and the harbour master is authorized to cause the immediate removal, at his discretion, of any vessel so anchoring. This regulation does not apply to such small vessels and yachts as may be permitted by the harbour master to moor in the extreme eastern part of James bay. The penalty incurred by the violation of this regulation is a fine of twenty dollars.

Logs.—The harbour master shall have authority to regulate the quantity of logs which a person may bring into the harbour of Victoria at one time and store therein at one time; under a penalty upon the person in charge of any logs entered, or of any tow-boat bringing them, in contravention to any such regulations enacted by the harbour master, of twenty dollars for any violation of same, and, in case of a continuing violation, a further penalty of ten dollars for every twelve hours during which said violation continues.

Length of Boom.—No boom of logs towed into the harbour shall exceed 600 feet in length, under a penalty of fifty dollars.

Length Tow Line.—No tow boats entering or leaving Victoria harbour, towing any vessel, shall use a tow line exceeding 100 feet in length from the stern of the tow boat to the prow of the vessel in tow, within the limits of any port, under penalty of twenty dollars, to be paid by the person in charge of such vessel contravening this regulation.

Channel to be Maintained.—A clear channel for navigation shall at all times be maintained in the harbour under a penalty of twenty dollars for any violation of this rule, and, in case of a continuing violation, a further penalty of ten dollars for every twelve hours during which said violation continues, to be paid by the person in charge of any vessel so contravening.



Time Limit for Remaining in Harbour.—No vessel shall be allowed to remain at anchor or tied up within the limits of the harbour for a period exceeding three months, without a special permission in writing from the harbour master, under a penalty of fifty dollars for the violation of this regulation, and a further penalty, in case of a continuing violation, of ten dollars for every twelve hours during which such violation continues, to be paid by the person in charge of such vessel contravening this regulation.

Speed.—Steam vessels using the port of Victoria shall be required to go slow, and, if necessary, stop their engines altogether when nearing places where submarine works are being operated. Any neglect of this precaution will render the person in charge of the vessel contravening liable to a fine of fifty dollars, for each and every offence.

Lights, Buoys, etc.—For description of lights, buoys, and other aids to navigation in Victoria harbour and approaches, and further hydrographic information, see 1913 Admiralty "British Columbia Pilot," pages 62 to 64 inclusive, covering chart No. 576, also Department's 1923 "List of Lights and Fog Signals on the Pacific Coast."

Directions.—See 1913 Admiralty "British Columbia Pilot," pages 65 and 66, covering chart No. 576.

Tides.—The mean rise of tides is 8 feet.

Wharves.—The Dominion Government's breakwater and docks at Ogden point, the breakwater, 2,750 feet in length, is solidly built of masonry at a cost of about \$2,000,000. The structure protects about 90 acres of water from the heavy southeasterly seas. Inside the breakwater are two piers, giving about 4,000 feet of berthage in about 35 feet of water at low tide. On the piers are sheds 700 feet and 200 feet long, each 200 feet wide, with rails along the sides and down the centre, connected up with the car-ferry slip, enabling the cars of all the mainland systems to be run from the manufactories of the east, alongside the ships, or into the centre of the sheds.

Rithets' wharf (known as the Outer wharf), contiguous to Ogden point, on the eastern side of the entrance to the inner harbour, comprises three wharves in from 27 to 33 feet of water, No. 1 wharf has a length of 688 feet by 100 feet wide and a shed of 541 feet by 60 feet, with a carrying capacity of 1,600 tons. At the ends of the sheds are open spaces for rough freight of 58,000 feet and 10,500 feet. Five slips give ample facilities for handling cargo through the ship's ports. No. 2 wharf, 1,050 feet in length by 125 feet in width, with shed 818 feet in length, varying in width from 59 feet to 90 feet, floor area 68,090; carrying capacity 13,000 tons; open space at ends of shed 21,500 and 18,000 square feet for rough freight, depth of water 31 feet. Space between wharves 190 feet. There is also berthage of 300 feet frontage, where small vessels can be made fast in 25 feet of water and two sheds respectively of 20,100 square feet, storing about 4,000 tons, and 8,000 feet, carrying about 1,800 tons. The whole property covers about 16 acres of land.

The southern side of the old Songhees Reserve, between Songhees point and Colville island, presents a logical area for future industrial development, with the probable reclamation of the area bounded by the wharf head-lines approved by the Government, as shown upon the map promulgated by Order-

in-Council, dated May 15, 1914. This stretch of land, with the railway facilities on the north and the wharf frontage to the south of about 3,500 feet (in 20 feet of water when developed) presents first-class advantages for manufacturing purposes that can hardly be long neglected.

The Imperial Oil Co.'s wharf, 140 yards northward of McLoughlin Point, extends out 150 feet from the shore and is L-shaped, the end of the wharf being 50 feet long and 40 feet wide. There is a depth of 20 feet at low water at the end of the wharf.

The Imperial Oil Co.'s station is located between the Victoria new road and the wharf, and consists of storehouses, offices, and tanks. At present there are four tanks erected, the largest, which is conspicuous, containing 1,250,000 gallons of fuel oil. Eventually there will be 10 tanks at this station.

The wharves in the harbour have a frontage of over 5,846 feet and shed area of 120,000 superficial feet; these lie along the city front, and the depths alongside range from 12 to 20 feet, probably more. Around the upper or inner harbour there are 12 wharves owned by industrial concerns; these have a frontage of some 1,500 feet, with ample shed accommodation, depths ranging from 6 to 22 feet. Around some of these wharves dredging has been done to a uniform depth of 20 feet.

Local Industries.—Entering the harbour are the mills of the Brackman & Ker Milling Co., situated at Shoal Point, manufacturing cereal foods, principally rolled oats and wheat flakes, with a capacity of 200 barrels per day.

The factory of the British American Paint Co. occupies a conspicuous position on Laurel point, in the approach to the inner harbour, and is the largest paint and varnish factory in Western Canada, doing an extensive export trade in marine paints under the trade-mark "Bapco" (short for B. A. Paint Co.).

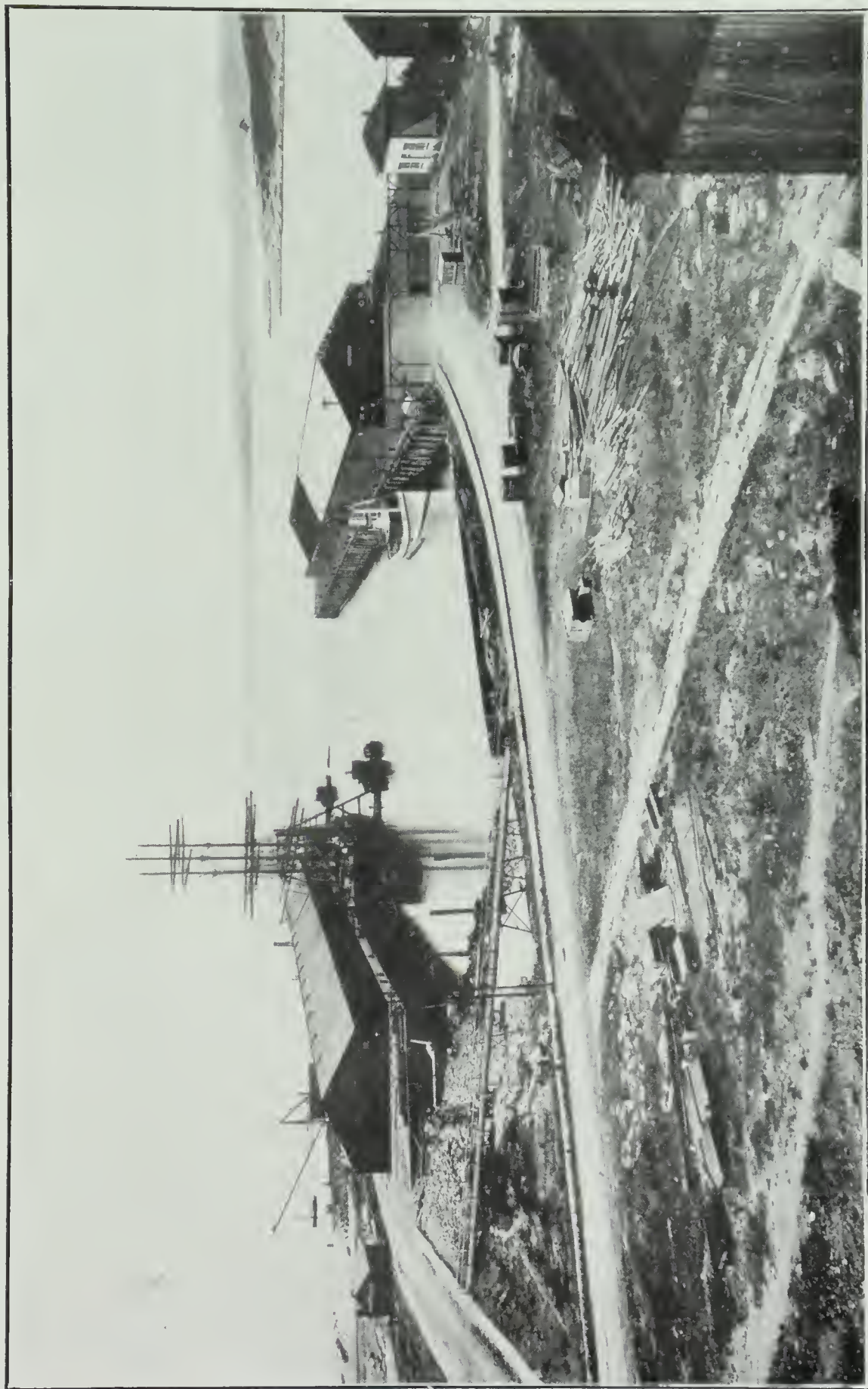
The Sidney Roofing and Paper Company occupy an important frontage on the inner harbour of about 600 feet between Songhees point and the railway bridge, and are now turning out at their new factory building paper and roofing material to the extent of their capacity and shipping large quantities to Australia, New Zealand and the Orient.

The Mount Royal Milling & Mfg. Co., Ltd., Store Street (Rice Mills), capacity of 15 tons daily of rice and rice flour, with a distributing area as far as the Great Lakes and up-island points. The company has also extensive wharfage facilities.

The Biscuit Factory of Ormonds, Ltd.—present monthly output is about 100,000 pounds of manufactured biscuits and confectionery, which are distributed in British Columbia and the far north.

The Shell Oil Company has a wharf and office on the "Reserve" east of Songhees point and contiguous to the factory of the Sidney Roofing Company, for the supply of gasoline, distillate, and lubricating oils. This wharf has a depth of 22 feet at low water. Fuel oils will be stored here shortly.

Lumbering Industry.—The principal lumber mills situated on the waterfront are those of the Canadian Puget Sound Lumber and Timber Company, Ltd., the Cameron Lumber Co., Ltd., Lemon, Gonnason Co., Ltd., Moore and Whittington, and James Leigh & Sons.



Victoria, B.C. Outer Wharves.

These mills, collectively, cut about 8,500,000 feet per month, and the McCarter Shingle Mills cut about 550,000 feet of cedar per month, manufacturing 5,500,000 shingles per month of the product value of \$25,000.

The greater part of the cut of these mills is sent inland to the prairies, or exported to Australia and the Orient.

Port Charges.—Are harbour master's dues paid twice a year if not paid elsewhere; sick mariners' dues, 2c per registered ton, paid thrice a year, if not paid elsewhere.

Cost of loading from 60c to 65c per ton; lumber \$2.25 to \$2.50 per 1,000 lumber feet; ballast loading \$1.20 per ton; 65c per ton discharging.

Pilotage is non-compulsory.

Supplies.—Provisions of all kinds procurable, and water from a floating tank, capable of going outside the harbour.

Coal.—From the Canadian Collieries (Dunsmuir) Ltd. at Union Bay, 120 miles from Victoria, is weighed and sent down as required, but a large quantity is not kept in stock. Vessels can load from the ocean wharves in the outer harbour or wharves in the inner harbour.

Fuel Oil in quantity may be obtained from the Imperial Oil Co.'s plant at McLoughlin point.

Patent Slips.—There are 3 slips on which vessels of 500 to 1,000 tons can be hauled up: Turpel, length of cradle 170 feet, with lifting power of 500 tons; Starways, length of cradle 165 feet, with lifting power of 800 tons; Victoria, length of cradle 290 feet with lifting power of 3,000 tons.

Repairs.—In the upper harbour are situated the works of the Victoria Machinery Depot Co. (commonly known as the V.M.D.) having a frontage of about 360 feet. The marine ways are fitted with a cradle 280 feet long by 60 feet wide, providing dry-dockage for repairing, cleaning, etc., for vessels up to 3,000 tons displacement; larger vessels are docked by the firm at Esquimalt drydock. An extensive wharf area is available for the receiving and storage of freight. A nine-ton steam hammer, an oil furnace and another oxy-acetylene welder have been added to the equipment of the Victoria Machinery Depot blacksmith shop, which was recently enlarged by an addition measuring 36 to 40 feet.

An electric welder has been installed, meeting a long-felt want. This equipment is on a scow, which is towed where wanted. Skilled workmen accompany the welder.

The recent erection of sheer-legs capable of lifting 100 tons on the new pier is one of the most important ship-repairing facilities in the harbour, meeting a long-felt want.

Ramsay's Machine Shops are situated at 1,630 Store street on the upper harbour where all kinds of machinery and engine repairs are promptly executed.

Quarantine Hospital.—The quarantine station is at William head, Parry bay. St. Joseph's hospital receives sick seamen.

Time and Storm Signals.—A time ball is operated by the Dominion Meteorological Service on the Belmont Building, corner of Government and Humboldt streets. Storm signals are shown from the same building.

Submarine cable.—From Ediz hook runs to the shore of the harbour, at the foot of Douglas skirting the public park, at the SE. end of the town.

Radio Station.—On Gonzales hill is open at all hours, call letters V.A.K. Range 250 sea miles.

Salvage Plant.—The Pacific Salvage Company have a plant at Victoria and 2 steamers, the "Algerine" and the "Salvor".

Communication.—Victoria is the southern terminus of the Esquimalt and Nanaimo road, a part of the C.P.R. system. Is a temporary terminal of the Victoria, Alberni, and Saanich peninsula branches of the C.P.R.—Is connected with Esquimalt by the B.C. Electric road.

Overseas Service.—The Steamship Lines trading from Victoria are:—

	Route
The Canadian Pacific Ocean Service, Ltd..	Japan, New York-Paris.
The Canadian Government Mercantile Marine.. . . .	Australia, New Zealand, Orient.
The Ocean Steamship Company, Ltd....	Japan, Hong Kong, Philippine Islands.
Nippon Yusen Kaisha (Japan Mail S.S. Co.).. . . .	Yokohama, Shanghai, Hong Kong, Singapore and Manila.
Maple Leaf Line.. . . .	New York, West Pacific ports, British Columbia, Swansea and Bristol.
Harrison Direct Line.. . . .	Antwerp, Glasgow, London, Liverpool, San Diego, North Pacific Coast ports.
Royal Mail Steam Packet Co.. . . .	Europe, Hong Kong, China, Ceylon, Manila, and North Pacific Coast.
Osaka Shosen Kaisha.. . . .	Japan, Hong Kong, Manila.
Canadian-Australia Royal Mail.. . . .	Auckland, Sydney, Honolulu, Suva.
Compagnie Generale Transatlantique....	
Grace Line.. . . .	Mexico and South American ports, via San Francisco.
Admiral Line.. . . .	Seattle and Oriental ports.
<i>Coastwise Service.</i> —	
Canadian Pacific Railway Co. B.C. Coast Steamship Service.. . . .	Alaska, Prince Rupert, Seattle, and West Coast.
Grand Trunk Pacific Steamship Co. Ltd..	Seattle, Victoria, Vancouver, Ocean Falls, Swanson Bay, Prince Rupert and Anyox.
Canadian Government Mercantile Mar- ine.. . . .	Vancouver California, Ocean Falls, Astoria, San Francisco and Los Angeles.
Puget Sound Navigation Co.. . . .	Seattle, Victoria, Puget Sound.
Admiral Line & Pacific S.S. Co.. . .	Seattle, Prince Rupert, Ketchikan, Wrangle, Juneau, Skagway, San Francisco, Oakland and Wilmington.
McCormick Steamship Line.. . . .	Seattle.
Border Line.. . . .	Seattle, Portland, Vancouver.

The City of Victoria.—Is the seat of the Government, the provincial legislative buildings are exceptionally fine and the dome is a conspicuous object from seaward. Victoria covers a large area of ground and has a number of beautiful residences, also educational institutions, hospitals, and library, and all modern conveniences.

The population in 1921 was 38,727. In 1920 Victoria had 333 industrial establishments, employing 2,719 hands, value of products \$15,822,037.

Trade.—The exports are gold, copper, coal, silver, lead, zinc, lumber, salmon, furs, and oil; imports iron, steel, salt, tin plates, and general merchandise.

Value of imports for fiscal year 1921-22, \$5,764,649; of exports, \$2,391,881.

Shipping.—During the fiscal year 1921-22, 4,606 vessels, register tonnage 4,168,992, entered the port; 4 591 vessels, register tonnage 4,156,730, cleared.

Lloyd's Agent.—F. N. J. White, c/o. C. Gardner Johnson, 108 Pemberton building.

INLAND PORTS AND HARBOURS

ST. LAWRENCE RIVER AND TRIBUTARIES

Brockville Harbour, Ont.—On north shore of upper St. Lawrence river. Anchorage close off the wharves is in from 20 to 40 feet. Alongside the wharves which have a total frontage of about 2,000 feet, depths range between 14 and 16 feet.

McNair islands, three in number, lie in the middle of the river $\frac{3}{4}$ of a mile below the Canadian Pacific Railway wharf, between these islands and the shore is North McNair shoal with $13\frac{1}{2}$ feet of water on it. A shoal also extends from the S.W. corner of the Government wharf at Brockville.

Buoys.—A red and black buoy marks McNair shoal and a red spar buoy the shoal off the Government wharf.

Wharves.—Some of the wharves with warehouses and sheds, depth alongside already given, are Waterworks wharf frontage 240 feet, Bresnan's wharf 70 feet; Bowie & Co's wharf 160 feet; Ault & Reynold's 218 feet; Canadian Pacific Railway wharf 650 feet; Smart Mfg. Co's wharf 400 feet; C. C. Coal Co's wharf 100 feet; Electric Light wharf 110 feet; railway sidings run to the Canadian Pacific Railway and Smart Manufacturing Co's wharves.

Town of Brockville, Leeds Co., is a station on Grand Trunk Railway and Canadian Pacific Railway; the steamers of Canada Steamship Lines Ltd. and of 8 other companies call. A ferry runs to Morristown opposite. The place is a popular summer resort and a number of summer residences line the river front in its neighbourhood—has an asylum; the population in 1921 was 10,040. In 1920 Brockville had 81 industrial establishments employing 1,263 hands; value of products \$7,522,113.

Trade.—For the fiscal year 1921-22, value of imports \$1,197,836; of exports \$94,104.

Shipping.—During the fiscal year 1921-22, 653 vessels register tonnage 403,214 entered the port; 651 vessels register tonnage 384,121 cleared.

Cardinal or Port Cardinal Harbour, Ont.—is on upper St. Lawrence river about 1 mile below Galop rapids. The Galop canal skirts its north side. The old canal which passed south of Cardinal is now used as a harbour and landing place for vessels drawing less than 9 feet.

Wharves.—There are two wharves: one with depths of 18 feet on one side and 6 feet on the other, and another opposite with depths of 10 to 12 feet alongside; there is an elevator near the latter.

Town of Cardinal, Grenville Co., has a population of about 1,200; is a station on Montreal and Toronto branch of Eastern division of Grand Trunk Railway.

Montreal and Cornwall Navigation Co., between Montreal and Kingston, calls weekly.

NOTE.—Miles are statute miles, unless otherwise stated.

Shipping.—During the fiscal year 1921-22, 47 vessels register tonnage 12,533 entered and cleared the port.

Cornwall Harbour, Ont.—is on north shore of upper St. Lawrence river at east entrance of Cornwall canal. The harbour lies between Cornwall island, $4\frac{1}{3}$ miles long and the town, with depths of from 43 to 21 feet in the channel to the canal entrance.

Cornwall Canal built to overcome Long Sault rapids—is 11 miles long. At Cornwall are two entrance locks, the northern and older one has 9 feet on the sill, the newer one 14 feet, as have the other 5 locks of the series, dimensions being, length 255 feet, breadth 46 feet.

The difference of surface level between the two ends of the canal is 47 feet; canal is lighted by numerous electric lights at night.

Vessels can berth in the old canal, and in the space at the junction of the old and new locks half a mile above the entrance.

St. Regis Dyke.—Is a cribwork, 500 feet long, built along the edge of the bank extending 400 yards from the N.E. point of Cornwall island, marking the south side of the ship channel; a dredged cut 300 feet wide with depth of over 14 feet, immediately N.E. of the dyke, leads through the bar with the 3 Crab islets on it, running from N.E. point of Cornwall island in the same direction for $\frac{7}{8}$ of a mile to Colquhoun island.

Lights.—Front range—on N.W. end of St. Regis dyke, a white, cylindrical steel structure shows 18 feet above the water a white fixed light.

Back range on S.E. end of dyke, a similar structure shows 30 feet above the water a similar light. The lights in line astern bearing $95^{\circ} 30'$ true lead along the north edge of the shoal water off Cornwall island.

Buoys.—The N.E. side of St. Regis dyke dredged cut is marked by 2 red spar buoys, and the approach to the cut from the N.W. by a gas red cylindrical buoy, showing an occulting red light, moored on N.E. side of the channel.

Wharves.—A wharf, on north side of canal, immediately south of the town, is 1,170 feet long with 14 feet depth of water alongside. On the river at the foot of the north lock is a wharf 500 feet long with 9 feet depth of water alongside at low water. On north bank of river $\frac{2}{3}$ of a mile from entrance locks is an old wharf near the cotton factory.

Dry Dock.—A dry dock which will accommodate vessels drawing 12 feet, is 300 feet long and 250 feet wide and is situated opposite the southeast corner of the town of Cornwall. Its location is convenient for repairing vessels. Material and labour can be easily procured. The dry dock is used in the winter for laying up vessels after the close of navigation.

Town of Cornwall.—Is the county town of Stormont Co.—has connections with the Grand Trunk Railway and Canadian Pacific Railway systems—has daily connection by Canada Steamship Lines with Kingston, Toronto, Montreal and other places, four other Canadian S.S. lines and one U.S. one also call at the port.—Has courthouse, a number of churches including 2 Roman Catholic ones, cotton and paper factories, and all the conveniences of a modern town. In 1920 Cornwall had 79 industrial establishments employing 2,148 hands; value of products \$10,173,519. The population in 1921 was 7,419.

Trade.—For the fiscal year 1921-22, value of exports \$9,042,395; of imports \$2,075,460.

Shipping.—During the fiscal year 1921-22, 140 vessels register tonnage 62,350 entered the port; 88 vessels register tonnage 21,664 cleared.

Gananoque Harbour, Ont.—On north shore of St. Lawrence river at mouth of Gananoque river; is 16 miles below Kingston by water.

Two dredged channels, each 400 yards long and 12 feet deep, lead eastward and westward from deep water to the town public wharf. Three black spar buoys mark the south sides one at each outer end, the third at the turn or junction of the two channels opposite the wharf.

A depth of 10 feet can be carried to the town bridge which crosses the river at a third of a mile from its mouth.

Lights.—On N.E. extreme of Prince Regent island about 4 miles south eastward of mouth of Gananoque river, a white, square, wood tower shows 44 feet above high water a white fixed light.

On Jackstraw shoal about 2 miles southeastward of mouth of Gananoque river, a white, square, wood tower shows 34 feet above high water a red fixed light.

On Spectacle shoal about 1½ miles SW. of mouth of Gananoque river, a white, square, wood tower on pier shows 28 feet above high water a white fixed light.

Buoy.—A red cylindrical buoy showing an occulting red light, is moored 260 feet N.E. of Prince Regent island lighthouse, vessels passing between the lighthouse and the buoy.

Wharves.—The wharves situated on east side of the river mouth have a frontage of about 1,200 feet, with depths alongside of from 9 to 12 feet. In detail are: the town Waterworks wharf, 144 feet frontage, no shed, no facilities for handling freight; depth of water 9 feet.—Taylor & Green Co's wharf, 375 feet front; one coal shed, 60 by 80 feet; another, 70 by 90 feet, one freight shed 24 by 30 feet, with facilities for unloading coal only, depth of water 11 feet.—T. I. Railway Cement wharf, 240 feet front, general freight shed, 30 by 85 feet; railway siding in rear of shed, depth of water, 13 feet.—T. I. Railway coal and lumber wharf, 134 feet front; railway siding on wharf, no shed, depth of water 9 feet.—Town public wharf, 60 feet front, no shed, water 10 feet.—Gibson's Coal wharf, 100 feet front, no sheds, water 10 feet.—Britton's Coal and Freight wharf, 200 feet front; freight shed, 30 by 60 feet, depth of water 12 feet.

Supplies.—Ships' supplies in quantity are obtainable.

Communication is postal, telegraph and telephone—is station on Thousand Islands Railway.

The Canada Steamship Line and four others make it a port of call.

A ferry steamboat runs to Clayton, state of New York.

Town of Gananoque, Leeds Co.. built on both sides of the river—is a summer resort for tourists being in the heart of the Thousand islands. Population in 1921 was 3,694.

Trade.—For the fiscal year 1921-22, value of imports \$298,452; of exports \$32,649.

Shipping.—During the fiscal year 1921-22, 566 vessels register tonnage 39,507 entered and cleared the port.

Iroquois Harbour, Ont.—is at the NE. or lower entrance to Galop canal, built to overcome the rapids at Iroquois point, port Cardinal, and the Galop.

Wharf.—There is a depth of 6 feet at the wharf.

Communication.—The village of Iroquois, Dundas Co., population 1,178 in 1921—has post and telegraph offices—a station on Montreal and Toronto branch of Eastern division of Grand Trunk Railway—and is a weekly point of call for the Montreal and Cornwall Navigation Co. between Montreal and Kingston.

Shipping.—During the fiscal year 1921-22, 57 vessels register tonnage 12,814 entered and cleared the port.

Morrisburg Harbour, Dundas Co., Ont.—is at foot of Rapide Plat canal on St. Lawrence river. There are 2 wharves at Morrisburg, one 600 feet by 25 feet, and the other 400 feet by 20 feet. Depth of water between the two wharves in the slip entrance to the old canal, 12 feet, width 100 feet.

Communication.—Postal and telegraph. Morrisburg is a station on the Montreal and Toronto line of G.T.R. Montreal and Cornwall Navigation Co., Montreal to Kingston, calls weekly.

Trade.—For fiscal year 1921-22, value of imports \$125,957; of exports \$19,903.

Shipping.—During the fiscal year 1921-22, 677 vessels register tonnage 32,311 entered the port; 695 vessels register tonnage 31,945 cleared.

Ottawa Harbour, Ont.—is on south shore of Ottawa river immediately below and eastward of the Union bridge over the Chaudiere falls. It comprises the harbour front of Ottawa, and that of Hull, on the north and Quebec side of the river.

The harbour front of Ottawa extends from the Union bridge eastward to the west end of Governor's bay close eastward of the junction of the Ottawa and Rideau rivers, a distance of about 3,600 yards.

The harbour front of Hull extends from the Union bridge eastward to a point nearly opposite the mouth of the Rideau river a distance of about 2,900 yards.

Royal Alexandra bridge spans the river at Nepean point, on the south shore, about 1,900 yards westward of west point of Governor's bay.

The Rideau Canal locks of which there are 8 are at the head of the somewhat deep bay close westward of Nepean point.

The average breadth of the river between the Ottawa and Hull harbour fronts eastward of Royal Alexandra bridge is about 700 yards, westward of the bridge about 600 yards.

The Rideau Canal commences at Ottawa its N.E. terminus, Kingston being its S.W. one. Ottawa is chiefly a canal port, the principal shipments of lumber, etc., being made via the canal, passenger and freight steamers however also communicate with Montreal and intermediate points on the river between Ottawa and Montreal.

The Canal basin a V-shaped one with wharf frontage on both sides, is on the west bank of the canal immediately above the locks, here canal steamers load and unload, and passengers are taken on board.

Rideau Canal.—Connecting Ottawa and St. Lawrence rivers—is $126\frac{1}{2}$ miles in length, has 47 locks with lengths of 110 feet breadths of 33 feet, and depths over sills of 5 feet. A little S.W. of Smiths Falls, $61\frac{1}{2}$ miles by canal from Ottawa, a branch of the canal 7 miles in length runs westward to Perth.

WHARVES

Ottawa Harbour Front.—All the depths at the wharves are given for normal stage of low water, starting from the eastward and working westward the wharves are: W. C. Edwards private wharf, timber and stone ballast, 122 feet long, 20 feet wide, depth alongside 9 feet, 2 sheds 23 feet by 23 feet, and 30 feet by 19 feet, this wharf is close westward of Governor's bay.

W. C. Edwards & Co's wharf, timber and stone ballast, 100 feet by 55 feet, depth alongside 10 feet.

W. C. Edwards & Co's wharf, timber and stone ballast, 550 feet by 75 feet, depth alongside $7\frac{1}{2}$ to 5 feet, close westward of Rideau river.

W. C. Edwards & Co's wharf, timber and stone ballast, 185 feet by 65 feet, depth alongside 8 feet to 1 foot, on island at mouth of Rideau river.

W. C. Edwards & Co's wharf, timber and stone ballast, 625 feet by 60 feet, depth alongside $7\frac{1}{2}$ to 5 feet, close westward of Rideau river.

Queen's wharf, timber and stone ballast, about 700 yards westward of last named wharf, 1,500 feet by 130 feet, depth alongside 3 feet.

Canadian Pacific Railway wharf, close west of Nepean point, timber and stone ballast, 225 feet by 80 feet, depths 9 to $10\frac{1}{2}$ feet.

Railways and Canals Department's wharf, south side canal basin, timber and stone ballast, frontage on 3 faces of basin, 1,805 feet, width 30 to 42 feet, depths 6 to 7 feet. Warehouses on this wharf are: 1. stone, 2 storeys, 102 feet by 59 feet. 2. Stone and brick, 6 storeys, 101 feet by 66 feet. 3. Stone and brick, 7 storeys, 100 feet by 60 feet. 4. Stone and brick, 3 storeys, 102 feet by 60 feet. 5. Freight shed, wood, 2 storeys, 101 feet by 50 feet.

Silicate Brick Co. of Ottawa wharf—on east bank of canal, close south of last, timber and stone ballast, 172 feet long, average width 40 feet, 6 feet depth of water alongside.

J. R. Booth's wharf, $\frac{3}{4}$ of a mile above Alexandra bridge, opposite Victoria island, timber and stone ballast, 100 feet by 75 feet, 13 feet at outer part rapidly lessening.

Victoria Island Shipyard wharf, opposite Booth's wharf, timber and stone ballast, length 200 feet, width 90 to 62 feet, depths alongside 21 to 10 feet.

Hull Harbour Front.—Depths are given for normal low water level, working from west to east the wharves are: E. B. Eddy Co's wharf, 500 yards above Alexandra bridge, timber and stone ballast, 610 feet long, average width 85 feet, depths alongside 13 to 4 feet.

E. B. Eddy Co's wharf, separated from the other by City Hall street, timber and stone ballast, 310 feet face, 210 feet side. 75 feet wide, depths 10 to 4 feet.

Department of Marine and Fisheries wharf,—close east of Alexandra bridge, cribwork foundation, concrete blocks, length of head 130 feet (3 levels, 40, 50 and 40 feet) width of head 70 feet, depths 14 to 11 feet.

Gilmour Co's wharf, opposite mouth of Rideau river, timber and stone ballast, length of face 800 feet, of side 400 feet, width 75 feet, depths alongside $5\frac{1}{2}$ to 5 feet.

Communication.—Ottawa is a terminus of the Ottawa and Pembroke branch of the Canadian National Railways, and of the Hawkesbury-Ottawa branch, and a station on the main line of the Ontario division of the Canadian National. Is a terminus of the North Shore, Ottawa to Montreal branch of the Canadian Pacific Railway, and of the Maniwaki and Waltham branch, of the Prescott branch, and a station on the main line. Is a terminus of the Ottawa and Swanton, Vt. branch of the Grand Trunk, and of the Ottawa and Madawaska branch.

SS. *Victoria* calls daily between Ottawa and Thurso. Ottawa Transportation Co. Line, Montreal and Ottawa, calls three times a week. Rideau line between Ottawa and Smiths Falls, calls once a week.

City of Ottawa, Carleton Co., capital of the Dominion and seat of government. The parliament buildings and library, of great architectural beauty, crown a high bastion like bluff jutting out into the river close west of the canal locks, with an almost sheer drop to the water's edge.

Ottawa is the seat of the Government offices, Government House, the Royal Mint, Victoria Museum and National Art Gallery, and Ottawa University and Ashbury College—has 57 schools and 100 churches.

In 1920 Ottawa had 552 industrial establishments employing 11,122 hands, value of products \$57,708,929. In 1921 the population of Ottawa was 107,843.

Trade.—For the fiscal year 1921-22, value of imports was \$10,111,158; exports not given.

Shipping.—During the fiscal year 1921-22, 64 vessels register tonnage 7,880 entered the port, 65 vessels register tonnage 8,231 cleared.

Lloyd's Agents.—D. Stewart Robertson & Sons, 12 Metropolitan Bldg.

City of Hull.—Wright Co., P.Q., is an important industrial centre, the seat of the E. B. Eddy Co's industries.

In 1920 Hull had 70 industrial establishments employing 3,023 hands, value of products \$16,623,648. Population in 1921 was 24,117.

Trade.—For the fiscal year 1921-22 value of imports \$1,139,809; exports not given.

Shipping.—During the fiscal year 1921-22, 105 vessels register tonnage 14,128 entered the port; 130 vessels register tonnage 15,092 cleared.

Prescott Harbour, Ont.—is on NW. shore of upper St. Lawrence river, opposite the American town of Ogdensburg.—Is an open roadstead but not much exposed the river only being about 1 mile wide opposite Prescott, and anchorage can be had in 50 feet of water about half a mile off the town wharves.

Lights.—On Windmill point a little more than $1\frac{1}{2}$ miles below middle of harbour front, a white circular stone tower shows 92 feet above high water a white fixed light.

On outer end of East pier, Dominion Lighthouse Depot, a white, steel skeleton structure shows 25 feet above high water a red fixed light.

Dominion Lighthouse Depot.—The Dominion Lighthouse Depot, under the control of the Department of Marine and Fisheries, is located at Prescott; lanterns, lenses, oil and other lighthouse supplies are kept at the depot and repair shops are maintained. Tests are also made of gas vapour burners and other kinds of burners and lenses, and of illuminants. Acetylene buoys and beacons are stored and sent to various points where aids to navigation are established.

The Depot wharves are the headquarters of small steam tenders, employed in light and buoy service on the upper St. Lawrence river and part of Lake Ontario.

Elevator.—There is a large elevator at Prescott for the transshipment of grain from the upper lakes into canal barges for Montreal.

Wharves.—The total wharf frontage of the harbour is about 4,000 feet with depths alongside of from 18 to 24 feet.

The wharves in detail are: Beginning at the west end, the first wharf is the Prescott waterworks and electric plant wharf, and the wharf of Consolidated Distillers, Ltd., there is a depth of 20 feet alongside these two wharves; next the Dominion Lighthouse Depot wharves, water 20 feet at head of one and 18 feet at head of the other; I. W. Plumb's coal wharf and the M. J. Buckley Estate coal wharf, with 20 feet of water at the head; the ferry wharf, then I. Purkis' coal wharf; next the grain elevator wharf, and then follows the Canadian Pacific Railway wharf with 24 feet of water; at the extreme east is the coal derrick of the George Hall Coal Company, with 24 feet of water alongside.

Town of Prescott.—Grenville Co., is a station on Grand Trunk and Canadian Pacific Railways, and connected by ferry with Ogdensburg.

Canada Steamship Lines call daily and about 7 other steamboat companies make it a port of call.

Population in 1921 was 2,636.

Trade —For the fiscal year 1921-22, value of exports \$7,479,281; of imports \$1,981,491.

Shipping.—During fiscal year 1921-22, 671 vessels register tonnage 329,058 entered the port; 675 vessels register tonnage 337,192 cleared.

Smiths Falls, Ont.—On Rideau river—is situated about 38 miles SW. of Ottawa as the crow flies, and $61\frac{1}{4}$ miles by Rideau river and canal.

In the neighbourhood of Smiths Falls are 4 locks of the Rideau canal, 3 combined locks and one detached one.

A branch of the canal, 6 miles long, runs from Beveridge, 5 miles SW. of Smiths Falls, westward to Perth.

Communication.—Is a station on the Smiths Falls and Toronto and Havelock sections of the Canadian Pacific Railway, and on the Carleton Place to Brockville branch of the same road—is a station on main line of Canadian National Railways. Ottawa Transportation Co.'s Rideau line between Ottawa and Smiths Falls calls once a week.

Town of Smiths Falls, Lanark Co., is the most important industrial town on the Rideau canal between Ottawa and Kingston. In 1921 the population was 6,790.

Shipping.—During the fiscal year 1921-22, 44 vessels, register tonnage 5,312, entered the port, 43 vessels, register tonnage 5,239, cleared.

St. Johns Harbour, P.Q.—On Richelieu river west bank—is much frequented by canal boats—has wharf accommodation running continuously along the harbour front at which barges tie up. The river is navigable for canal boats from Sorel at the mouth to lake Champlain.

The approach to the canal basin and the basin itself is dredged to a depth of 8 feet. The river is buoyed from St. Johns to Rouse's point, and from Chambly to St. Johns.

Port Charges.—Harbour master's dues paid twice a year if not collected elsewhere.

Communication.—Is a station on Farnham and Newport section of C.P.R. on St. Albans and St. Johns branch of Central Vermont road, and on Rouse's point branch of Grand Trunk Railway.

Town of St. Johns.—St. Johns Co. is an important industrial town. Had in 1921 a population of 7,734. In 1920 St. Johns had 53 industrial establishments employing 5,526 hands; value of products \$21,012,707.

Trade.—For fiscal year 1921-22, value of exports \$29,737,668; of imports \$6,937,458.

Shipping.—During the fiscal year 1921-22, 323 vessels, register tonnage 28,170, entered the port; 565 vessels, register tonnage 52,926, cleared.

Valleyfield or Salaberry de Valleyfield, P.Q.—is at the NE. end of lake St. Francis and upper end of Beauharnois canal. Clarke island lies close westward of the town and end of the canal. Depths in ship channel in lake St. Francis to the canal are nowhere less than 14 feet.

Communication.—Is connected to Montreal by St. Lawrence and Adirondack Railway and to Montreal, Toronto and Ottawa by Grand Trunk Railway through Coteau Junction over railway bridge crossing from Valleyfield, Clarke, Round and Giroux islands, to Coteau Landing.

Steamer *Jean D'Arc*, between Montreal and Valleyfield, calls three times a week.

Steamer *Laurencia*, between Montreal and Valleyfield, calls three times a week.

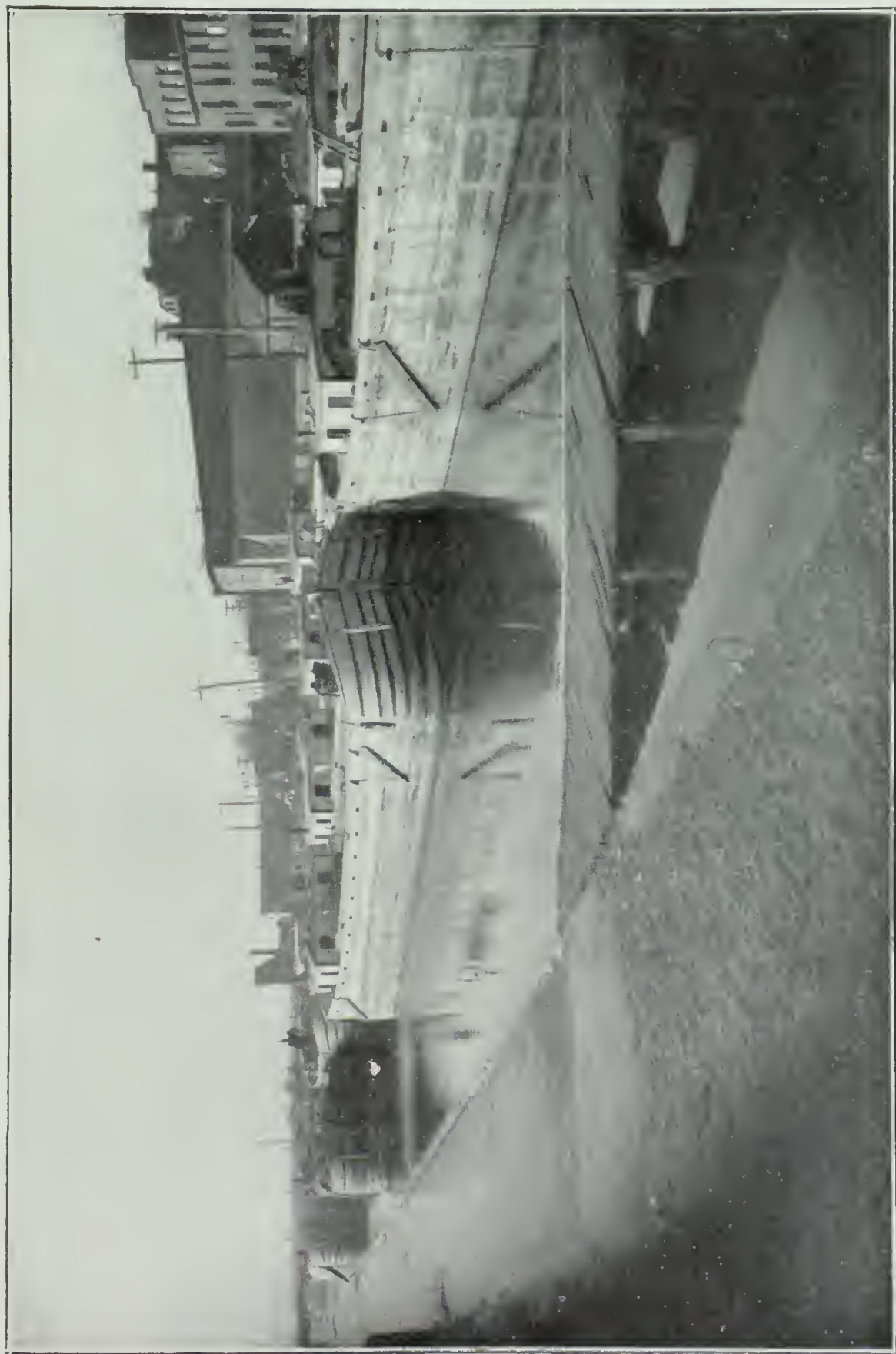
Town of Valleyfield, Beauharnois Co., is partly built on ile de Salaberry, connected to the main shore by a dam; the cathedral spire, tall chimney and factories NW. of it are conspicuous marks.

Valleyfield is an important manufacturing town, the principal industry being the manufacture of cotton goods.

In 1920 Valleyfield had 46 industrial establishments employing 2,338 hands, value of products \$14,536,231. Population in 1921 was 9,215.

Trade.—For fiscal year 1921-22, value of imports \$2,380,539; exports not given.

Shipping.—During fiscal year 1921-22, 3 vessels, register tonnage 1,125, entered the port; 3 vessels, register tonnage 319, cleared.



Port of St. Johns, P.Q.

LAKE ONTARIO.

Bath Harbour, Ont.—on north shore of bay of Quinte, opposite Amherst island, is at NE. end of a bay about $1\frac{1}{5}$ miles long and $\frac{2}{3}$ of a mile deep, Bath point being its SE. extremity. There is a depth of 30 feet in the bay off the wharves, and 12 feet can be carried alongside them.

Wharves.—There are 2 wharves, one with 140 feet front, with coal shed, grain warehouse, and general freight shed—and another 140 feet by 85 feet with flour mill, coal shed, and grain warehouse; depths alongside both wharves about 12 feet.

Communication.—Postal and telegraph. The nearest railway station is Ernestown on Canadian National system.

Shipping.—During the fiscal year 1921-22, 147 vessels, register tonnage 11,865, entered the port; 50 vessels, register tonnage 4,057, cleared.

Belleville Harbour, Ont.—is on the north shore of the bay of Quinte at the mouth of the Moira river. The southern edge of the shallow bank at the mouth of the Moira river is marked by 3 black spar buoys.

A cut the southern end of which is between the outer end of the new wharf and the lighthouse leads diagonally across the mouth of the river to the Halton Lumber Co. wharf. It is marked by 3 red spar buoys and 3 black spar buoys, and dredged to a least depth of 10 feet.

Bay of Quinte Bridge.—From Belleville to Rossmore a small village on the south side has a draw span near the latter, the centre of the draw is 195 feet from the south shore with a channel 100 feet wide on north and south sides.

Lights.—A fixed white light is shown on the south side of the southern opening of the bridge, and another fixed white light on the northern side of the north opening.

Two fixed green lights are shown from each end of the draw when open.

A red light instead of the green lights means bridge closed.

On crib at SE. end of shoal, entrance to harbour, 690 feet west from end of railway wharf a white, square, wood tower, shows from a height of 38 feet above high water, a red fixed light.

Directions for Belleville Harbour.—See Canadian Hydrographic office "Sailing Directions for the Canadian Shores of Lake Ontario," pages 92 and 93, covering chart No. 69.

Wharves.—A railway wharf completed in 1914 with an approach 200 feet long, extends 800 feet southward into the bay from the east entrance point of Moira river. It has a 200 feet easterly extension at outer end; nearly covered by a freight shed—outer end of wharf, depth 9 feet alongside. The Halton Lumber Co's wharf is at the west entrance point of Moira river.

Communication.—Is a station on main line of Canadian Pacific and Canadian National railways between Montreal and Toronto.



The City of Belleville, Hastings Co., is the most important commercial and industrial port on the bay of Quinte; population in 1921, 12,206. Had in 1920, 101 industrial establishments employing 866 hands, value of products \$3,404,154.



Belleville, Victoria Park.

Trade.—For the fiscal year 1921-22, value of imports \$1,299,129; of exports \$20,320.

Shipping.—During the fiscal year 1921-22, 122 vessels, register tonnage 14,617 entered the port; 125 vessels, register tonnage 14,846 cleared.

Bowmanville or Port Darlington Harbour, Ont.—on north shore of lake Ontario—at western part—at the outlet of Bowmanville creek—is formed by 2 parallel piers, 150 feet apart both extending 1,150 feet southward; 9 feet can be carried to inner ends of piers.

Light.—On east pier head, a lantern from roof of freight shed shows a white with red sector fixed light.

Directions.—At night a vessel approaching the harbour should keep in the red sector until entrance between the piers is picked up.

Elevators.—At inner end of the east pier are two elevators and a coal shed 150 feet by 56 feet.

Town of Bowmanville, Durham Co., lies 2 miles northward of the harbour; is a station on the lake shore line of the C.P.R. and on eastern division of Grand Trunk. Population in 1921 was 3,233.

Trade.—For fiscal year 1921-22, value of imports \$257,801; exports not given.

Shipping.—During the fiscal year 1921-22, 6 vessels register tonnage 990 entered and cleared the port.

Bronte Harbour, Ont.—is at mouth of Bronte creek, $6\frac{3}{4}$ miles NE. of Hamilton Harbour entrance—is an artificial harbour formed by 2 piers, about 80 feet apart, nearly parallel and curving slightly southward at the ends, which extend eastward into the lake; the southern pier is about 750 feet long and the northern one about 930 feet. The channel between the piers has a least depth of 5 feet. Above the piers the creek is shallow. Is chiefly a fishing harbour.

Light.—On outer end of north pier, a white, square wood tower shows 27 feet above high water white fixed light.

Port charges.—There is a harbour master and usual port charges.

Bronte Village, Halton Co., at mouth of Bronte creek; has flour mill with tall distinctive chimney, Methodist church, and summer pavilion on beach south of the piers. Has post and telegraph offices—and is a station on Hamilton section of C.P.R. and Toronto and Hamilton branch of Grand Trunk Railway.

Cobourg Harbour, Ont.—on north shore of lake Ontario, about 68 miles east of Toronto is an artificial harbour. The outer harbour is contained between the east and west piers.

The East pier, 900 feet long, with several slight bends, runs out in a southerly direction from the foot of Division street.

The West pier, the inner end of which is 450 yards westward of the east pier, extends 1,200 feet southward from the foot of Spring street, thence, making an angle of 126° , it extends 730 feet eastward thus enclosing the outer harbour, and leaving an entrance 375 feet in width.

The inner harbour is formed by the central pier and the inner part of the east pier.

The Central pier, the inner end of which is 750 feet westward of the east pier, converges towards it, leaving an opening 240 feet wide.

Projecting from a point 390 feet southward from the inner end of the east pier, a small pier 320 feet long, extends westward towards the central pier, leaving an opening 190 feet in width, the entrance into the inner harbour.

Depths.—There is 13 feet of water in the middle of the outer entrance with slightly deeper water on each side. In the middle of the dredged cut along the east pier, the axis of which is marked by a set of range lights, there is a least depth of 16 feet. In the inner harbour depths vary between $14\frac{1}{2}$ and 18 feet.

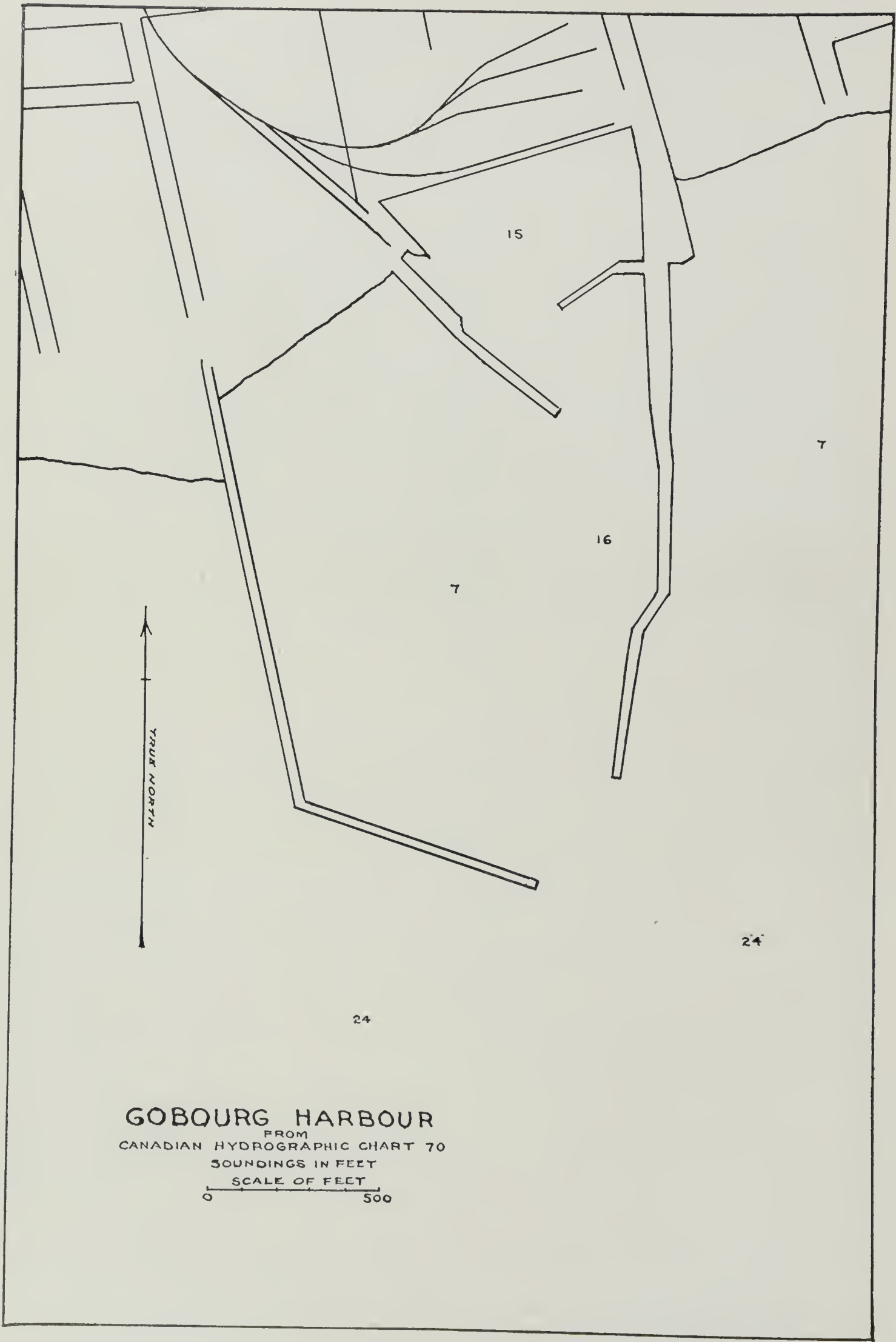
A shoal patch with 12 feet of water upon it lies S.S.E. distant 100 yards from the outer end of the east pier.

The western part of the outer harbour is shallow.

Lights on the west pier, a white pyramidal square reinforced concrete beacon shows 40 feet above high water, a white occulting light.

On the east pier, a wooden pole shows 38 feet above high water, a red occulting light.

Range Light.—Front—A red fixed light is shown at a height of 30 feet above high water, from a lantern in front of a white diamond-shaped day mark on a mast on the west edge of the east pier.



The rear fixed red light is also shown at a height of 38 feet above high water, from a lantern in front of a diamond-shaped day mark on a mast on east side of the same pier, 376 feet $8^{\circ} 20'$ true from the front.

Storm Signals are hoisted from a mast a few feet from the back range light.

Fog Signal.—A diaphone is operated, from a small white rectangular wood building on the outer end of the central pier.

Life Boat is manned by a volunteer crew.

Communication.—Cobourg is a station on main line of Ontario division of Canadian National Railways; on Lake Shore Line of C.P.R., and on Montreal and Toronto line of Eastern division of Grand Trunk Railway.



Cobourg, Ont., Car Ferry

Smaller steamers of Canada Steamship Lines, Ltd., between Toronto and Bay of Quinte ports, call at Cobourg.

Passenger car ferry boats ply all year between Cobourg and Charlotte, N.Y.

Town of Cobourg is built on low land close to the lake shore—is a residential town, and a favourite summer resort, particularly for American visitors—has churches, town hall and asylum with cupolas—the tall chimney of the water-works pumping house is a conspicuous object. Population in 1921 was 5,327.

Trade.—For fiscal year 1921-22, value of imports \$2,118,912; of exports \$1,156,539.

Shipping.—During fiscal year 1921-22, 531 vessels, register tonnage 1,524,094 entered and cleared the port.

Deseronto Harbour, Ont.—On north side of the most northerly part of bay of Quinte, 15 miles eastward of Belleville has a harbour front of about two-thirds of a mile, the best water is at western part of westernmost wharf

where 11 feet may be carried. The port is one of the principal commercial and lumber ports on north shore of lake Ontario between Kingston and Toronto.

Wharves.—The principal wharf is the Canadian National Railway's wharf at the foot of Mill street with depot and warehouse and railway siding; four other wharves also with railway sidings are near the Railway wharf. There are four other wharves at east end of harbour.

Repairs.—There are two marine railways for effecting repairs to ships.

Ferry.—A ferry is operated between Deseronto and Picton.

Town of Deseronto, Hastings Co., on shore of harbour; has a number of important industries including terra cotta works, chemical works, saw mills, car works, and match factory, conspicuous buildings are Presbyterian church, and post office with clock dial illuminated at night. Population in 1921 was 1,847. Is a station on main line of Ontario division of Canadian National Railways.

Trade for fiscal year 1921-22 value of imports \$112,240; exports not given.

Shipping —During the fiscal year 1921-22, 9 vessels register tonnage 1,017 entered and cleared the port.

Hamilton Harbour.—The harbour is land locked and comprises about seven thousand acres. It is triangular in shape. The north side is bold and fairly steep to, but the south and northeast sides are low and bordered with shallow mud flats. Deep water approaches to within three cables of the west end of the harbour.

The harbour is separated from lake Ontario by a narrow strip of sand 3 miles long and from 200 to 1,250 feet in width. On it is situated Hamilton Beach, a summer resort.

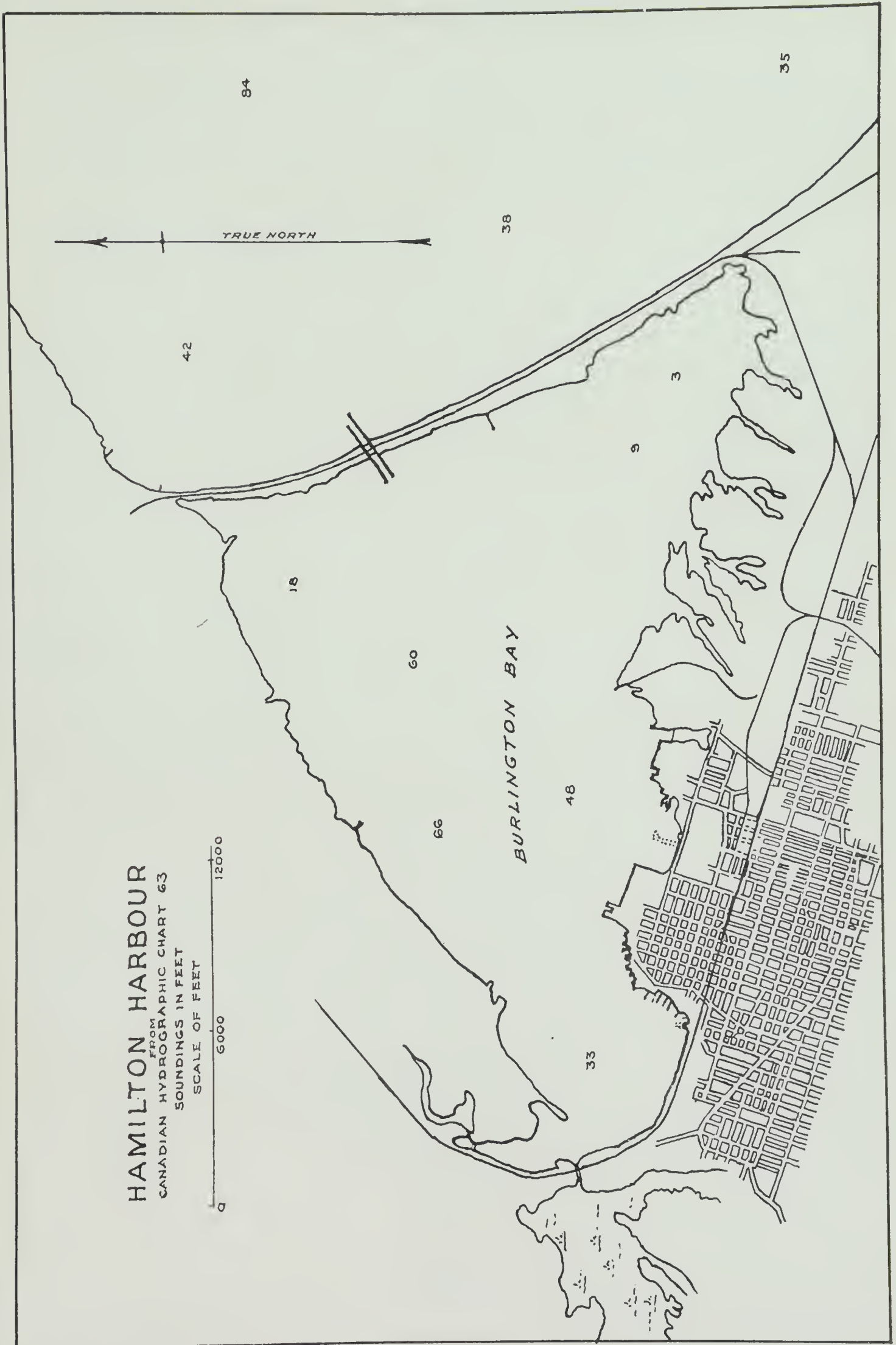
The entrance to the harbour is between two piers built through this strip of sand. The piers both extend 900 feet into the harbour. The channel between the piers has been dredged to a depth of 15 feet; both approaches to this channel have slightly greater depths.

In daylight the entrance can be picked up from the offing by four tall steam electric power transmission towers erected on the beach close to each entrance pier. A high steel water tank half a mile south of the entrance is also a conspicuous mark.

Harbour Commission.—The harbour is under a commission consisting of three commissioners, 2 appointed by Governor-in-Council and one appointed by council of city of Hamilton, who report annually to the Minister of Marine and Fisheries.

Lights, etc.—For a description of lights and other aids to navigation, see pages 66 and 67 of the 1921 Sailing Directions for the Canadian Shores of Lake Ontario, issued by the Canadian Hydrographic Office of the Department of Marine, covering chart No. 67; also Department's 1923 List of Lights and Fog Signals on the Inland Waters (West of Montreal and East of B.C.).

Bridges.—There are two swing bridges across the entrance piers, the Canadian National Railways bridge and the Highway bridge carrying the electric railway between Hamilton and Oakville.



Wharves.—The Steel Company of Canada wharf extends from the outer part of the point situated at the middle of the south side of the harbour, is 250 feet long and has 13 feet of water at its outer part.

The International Harvester Company wharves are built on each side of Sherman inlet, at the foot of Sherman avenue. The wharf on the east side of Sherman inlet is 490 feet long, that on the west side 1,000 feet long. Two buoyed channels leading to these wharves, one from the west and the other from the north, have been dredged to a least depth of 13 feet.

The harbour commissioners operate a public wharf at the foot of Catharine street on which is a freight shed with floor surface of 28,500 square feet. The wharf is 430 feet long on the east side and 250 feet on the west side. Sixteen feet can be carried to all sides of the wharf.

A revetment wall has been built by the harbour commissioners for a distance of 1,650 feet east of this wharf, thence 1,160 feet south to the foot of Wellington street. Fifteen feet can be carried to this wall except at the outlet of a sewer 1,000 feet east of the harbour commissioners' wharf where there is about 8 feet of water.

One hundred feet westward and nearly parallel to the harbour commissioners' wharf is another, 250 feet long and 30 feet wide, with a freight shed nearly covering it. Fourteen feet may be carried to the east side of this wharf.

The Canada Steamship Lines, Ltd., operate a wharf on the east side of the slip at the foot of James street. Passenger boats plying between Toronto and Hamilton leave from it. In addition to the passenger shed it has a freight shed with floor surface of 6,000 square feet. There is 14 feet of water in this slip, which should be approached from the north to clear the shallow water which extends 300 yards northward from the shore between this slip and the ferry wharf eastward.

The Canada Steamship Lines, Ltd., also operate an irregular pier with a wharf extending west from its inner end on the west side of the above mentioned slip for freight mostly. On them are sheds with floor surface of 20,000 square feet. Along the west side of this pier there is only 9 feet of water, but along the south wharf 15 feet.

Brown wharf at the foot of McNab street is 170 feet long on the north and west sides and 200 feet long on the east side, has a freight shed with floor surface of 18,000 square feet. There is 15 feet along all the sides of this wharf except at the inner ends where the water is a little shallower.

The remainder of the south side of the harbour consists of ruins, wharves for the handling of ice only, boathouses and clubhouses and unused wharves.

Holy Sepulchre cemetery wharf 95 feet long and 25 feet wide extends from the north side of the harbour from the ferry wharf $1\frac{1}{4}$ mile westward of Wabassa Park wharf. A cut 60 feet in width, bearing NW. and leading to the east side of the wharf has been dredged to a least depth of 6 feet.

Wabassa Park wharf, about the middle of the north side of Hamilton harbour, is 380 feet long and 80 feet wide. Twelve feet can be carried to the outer end of the wharf and 10 feet to outer sides. A ferry boat runs between this wharf and the ferry wharf at the foot of John street.

Ferry boats run from a small wharf at the foot of John street to Wabassa Park and Holy Sepulchre cemetery.

Repairs.—Small repairs only may be made to machinery. Hamilton has no dry dock. The nearest dry dock for vessels drawing $10\frac{1}{2}$ feet is at Port Dalhousie, and for vessels drawing more, at Kingston.

City of Hamilton, Wentworth county, Ont., had in 1921 a population of 114,151. The main part of the city is built on low land on the south side of Burlington bay. The residential part extends to the plateau which rises to a height of 400 feet above the lake, with almost perpendicular walls.

Hamilton is an important railway point being served by the Toronto, Hamilton and Buffalo Railway and the Canadian National Railways; the Canadian Pacific has access into Hamilton over the tracks of the former.

The Canada Steamship Lines operate a regular passenger and package freight service between Toronto and Hamilton. An electric railway runs north to Oakville and another east to Beamsville.

In 1920 Hamilton had 790 industrial establishments employing 30,454 hands; value of products, \$167,190,671.

Industries.—The chief industries are: Steel Company of Canada, International Harvester Company of Canada, Grasselli Chemical Company, the National Steel Car Company and the Dominion Power and Transmission Company.

Hamilton has a number of very fine boat builders. Gasoline boats of all kinds, yachts, sail boats and canoes are manufactured and shipped in large numbers.

Trade.—For the fiscal year 1921-22, value of imports, \$26,972,604, of exports, \$465,146.

Shipping.—During the fiscal year 1921-22, 623 vessels, register tonnage 326,218, entered the port: 586 vessels, register tonnage 283,970, cleared.

Lloyd's Agent.—A. B. Lambe.

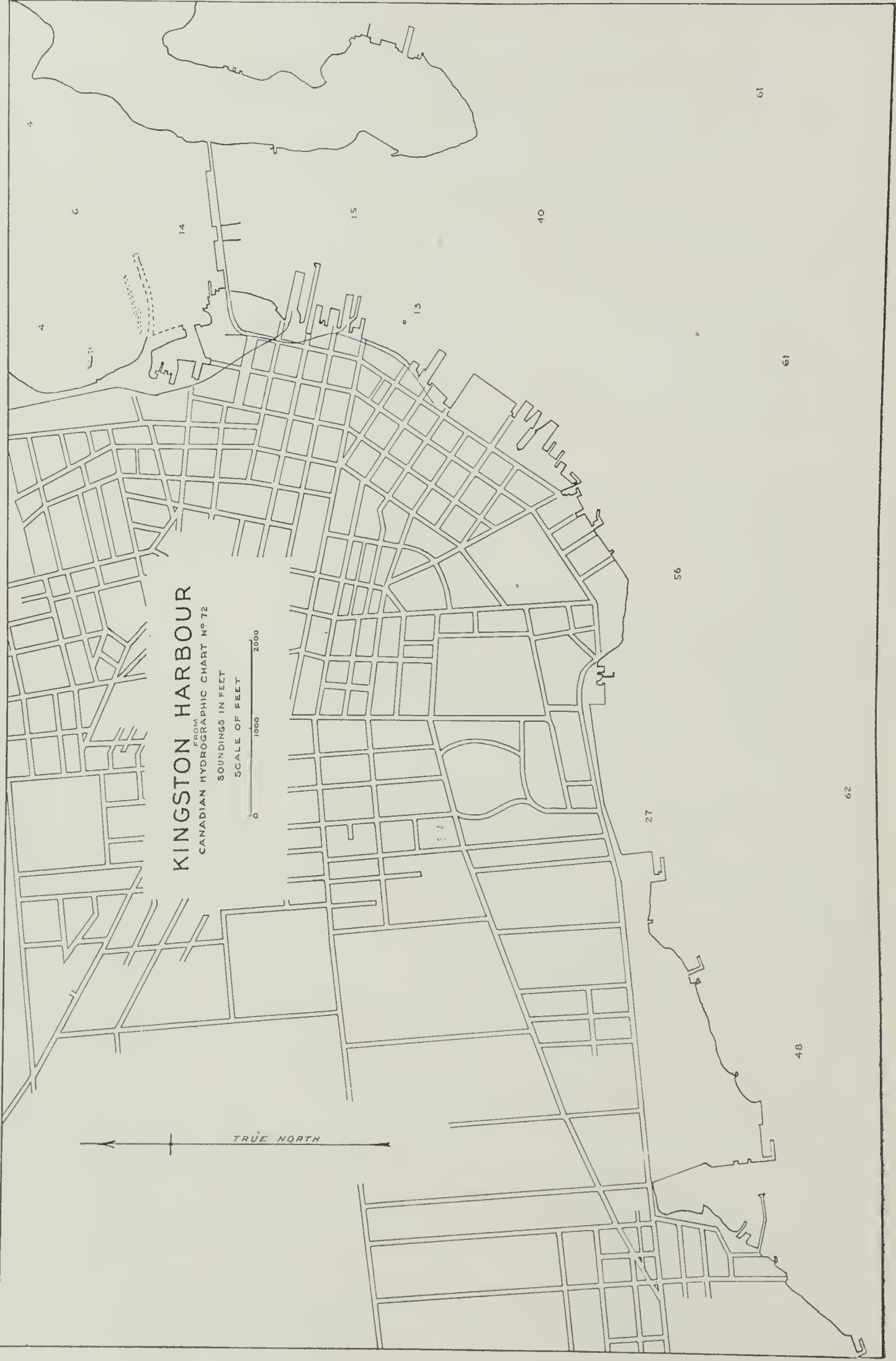
Kingston Harbour, Ont.—is at NE. end of lake Ontario at the mouth of the Cataraqui river. From the penitentiary landing at the west end of Kingston the wharves are almost continuous for 2 miles to the La Salle causeway crossing the Cataraqui river and have a total frontage of about 4,000 feet, and depths alongside ranging from 12 to 20 feet.

The average breadth of the portion of the harbour lying between Kingston and the peninsula of Point Frederick to the eastward, separating the harbour from Navy bay, is about $\frac{1}{3}$ of a mile as far as the bridge. A depth of 15 feet can be carried into the harbour on the line of the range lights. The harbour is under the control of the City Corporation.

La Salle Causeway crosses the harbour half a mile north of point Frederick, and through it by a lift 150 feet wide, vessels can proceed to the Kingston and Pembroke Railway wharf at Kingston, or if drawing less than 5 feet to Ottawa and Perth by the Rideau Canal system.

Lights.—Kingston City Hall, the illuminated clock of the city hall, 107 feet above the water, serves as a white fixed light.

Barriefield Common Range—the front red tripod topped by a white oval beacon is erected 370 feet east of La Salle causeway, and shows 48 feet above the water a white fixed light.



The back similar structure, 500 yards 37° true from front shows 75 feet above the water a similar light.

Lights in line lead NW. of Carruthers and Point Frederick shoals.

Portsmouth Range Lights.—Front—On east end of Carruthers point about $1\frac{1}{4}$ miles westward of Portsmouth, a white, square, wood tower shows 32 feet above the water a white fixed light.

Back—A white, square, skeleton tower on north shore of Little Cataraqui bay, 3,550 feet, $18^{\circ} 30'$ true from front, shows 61 feet above the water a white fixed light.

Lights in line lead in from lake Ontario to the north channel, approaching Kingston.

Buoys.—A gas cylindrical buoy, showing a white fixed light marks Penitentiary shoal in the river channel about midway between Kingston and Portsmouth.

Spar buoys mark Carruthers shoal close east of the town, and the shoal off Point Frederick, and west end of bank leading northward from these shoals.

Dry Docks.—The Government dry dock is situated 600 yards south of the City Hall. Its length is 280 feet, the breadth of entrance 55 feet, and the depth on sill $13\frac{3}{4}$ feet at the extreme low water of 1895.

A private dry dock, suitable only for small vessels, is situated above the bridge, and known as Davis dry dock. It is 180 feet long, 30 feet broad, with a depth of 6 feet on the sill.

Elevators.—Kingston has three grain elevators with a capacity of 1,800,000 bushels, and considerable quantities of wheat are transhipped to ocean ports from Kingston.

Wharves.—The wharves from west to east are Portsmouth pier, about 610 feet long by 20 feet wide, depth of water from 4 to 17 feet.—Penitentiary wharf, frontage 1,040 feet, with an angle from the west side 230 feet by 30 feet.—Clark's malt house wharf, 180 feet on the west side by 35 feet, the front side of the angle is 140 feet, depth of water 21 to 22 feet along the front side.—Rathbun's wharf, length along the front 275 feet, by 30 feet in width with sheds, water alongside from 11 to 17 feet.—Maitland street wharf, 120 feet long by 20 wide, water alongside 17 feet.—Waterworks wharf, front side of angle, 155 feet by 20 feet wide, depth of water from 14 to 18 feet; another waterworks wharf, 220 feet from shore to outer end by 25 feet wide, water 27 to 29 feet at outer end.—Moder's elevator wharf with 20 feet of water at the outer end.—Kingston Locomotive Works wharf, 410 feet long by 265 wide on the front, water along the front side, 18 feet.—Craig's wharf, frontage, 145 feet, depth of water 10 to 11 feet.—Grand Trunk freight shed wharf, 272 feet frontage, with from 12 to 14 feet of water alongside.—Swift's wharf, west side, 400 feet long by 82 feet wide, with freight sheds, depth of water along the front 12 feet.—Ferry dock, 214 feet long by 36 feet wide, depth of water along the front 12 feet.—Richardson's elevator wharf, 394 feet long by 65 feet wide, water at outer end, 10 feet 6 inches.—Mrs. Harty's wharf, 200 feet long by 104 wide, depth of water at outer end 8 feet.—Crawford's wharf, 196 feet long by 64 feet wide, depth of water 8 feet at the head of the wharf.

Montreal Transportation Co.'s wharf, 810 feet long, width varying from 66 feet to 20 feet, with two projections on the east side 80 feet long each, water alongside projection, 17 feet, at the outer end, 13 feet 6 inches.—Montreal Transportation Co.'s elevator wharf, 645 feet long by 92 feet wide, depth of water along the west side 10 feet, at the outer end 16 feet.

Above the bridge over the Cataraqui river is the coal wharf of the Kingston and Pembroke Railway Co. 400 feet long, another wharf of the same company 925 feet long by 66 feet, and one 760 feet long by 68 feet wide, there are railway tracks on all these three wharves.

Repairs.—Extensive repairs can be made to vessels.

Supplies.—Ships' stores and supplies of all sorts in quantity obtainable.

Communication.—Kingston is connected with the main Grand Trunk Railway line by a branch $2\frac{1}{4}$ miles long—is a terminus of the Bay of Quinte, and Kingston and Pembroke roads.

Rockport Navigation Co. between Kingston and Cape Vincent, N.Y., calls daily.

Montreal and Corwall Navigation Co. calls weekly Canada Steamship Lines, Toronto Line, 3 to 6 times a week.

City of Kingston, Frontenac Co., has as conspicuous objects, dome of City Hall with illuminated clock, tower of St. Mary's Roman Catholic cathedral, dome of St. George's Anglican cathedral, Penitentiary dome, Rockwood asylum and the grain elevators.

It is a military and university town, the seat of Queens university and the Royal Military College of Canada which is beautifully situated on point Frederick.

On point Frederick is also Fort Frederick and on point Henry close to the eastward across Navy bay, Fort Henry. There are Martello towers on point Frederick, on Cedar island about half a mile to the eastward, and on the south and east shores of the town. The Tete du Pont barracks are at the town end of La Salle causeway. The penitentiary is at Portsmouth close west of the town.

In 1920 Kingston had 174 industrial establishments employing 2,494 hands, value of products \$8,949,226. Population in 1921 was 21,753.

Trade.—For the fiscal year 1921-22, value of imports \$1,830,197; of exports \$180,226.

Shipping.—During the fiscal year 1921-22, 1,713 vessels register tonnage 760,117 entered the port; 1,552 vessels register tonnage 655,697 cleared.

Lloyd's Agent.—C. S. Kirkpatrick, 36 Clarence street.

Napanee Harbour, Ont.—is $5\frac{1}{2}$ miles NE. from the entrance of the Napanee river which is less than 1 mile eastward of Deseronto. A channel 75 feet in width and least depth 9 feet, has been dredged to the town. The channel is marked by 14 spar buoys.

Wharves.—There are 11 wharves in the harbour, 8 on north side and 3 on south side, with grain and coal sheds. There is a cold storage shed for apples.

Town of Napanee.—Had in 1921 a population of 3,038; is a station on main line of Ontario division of the Canadian National Railways and on the Montreal

and Toronto branch of the Grand Trunk Railway. Is the centre of an apple growing district.

Trade.—For fiscal year 1921-22, value of imports \$363,355; exports not given.

Shipping.—During the fiscal year 1921-22, 29 vessels register tonnage 5,043 entered the port, 30 vessels register tonnage 3,568 cleared.

Newcastle Harbour, Ont.—on north shore of lake Ontario, at mouth of a creek, nearly 4 miles eastward of Port Darlington; is formed by 2 parallel piers 70 feet apart, and a breakwater 150 feet west of west pier at the shore end.

The east pier, 800 feet long, in a southerly direction, extends 270 feet beyond the outer end of west pier, the breakwater extending in a S.E. direction converges towards the east pier, leaving an entrance 150 feet wide. Near the inner end of the east pier is an elevator and coal shed to which 7 feet may be carried; 11 feet can be carried to outer part of east pier.

Newcastle Village, Durham Co., lies $1\frac{1}{2}$ miles northward of the harbour; contains churches, telegraph and post offices—is a station on Lake Shore line of C.P.R. and Montreal and Toronto branch of Grand Trunk Railway.

Niagara-on-the-Lake Harbour, Ont.—is at mouth of Niagara river navigable to Queenston, 5 miles up—a bar called Niagara bar stretches in a N.E. direction for $3\frac{1}{2}$ miles off Four Mile point, $2\frac{1}{3}$ miles west of mouth of river, the bar has an average width of one mile, under 18 feet depth, and least depth of 9 feet. A gas and bell buoy marks N.E. end of bar.

Fort Niagara, an old fort, is at mouth of river on east side.

Wharves.—The wharf of Canada Steamship Lines is on east side of river 7 cables from west entrance point—has deep water alongside, and a slip back of it with least depth 5 feet affording good shelter. Another wharf adjoining is 100 feet by 35 feet.

Range Lights.—Front light near S.E. end of wharf a white, square, wood tower shows 30 feet above high water a red fixed light. Diaphone in connection.

Rear light—a similar tower 690 feet, $152^{\circ} 30'$ true from front, shows 43 feet above high water a similar light.

Light.—On south side of east point of mouth of river a grey octagonal steel tower shows 91 feet above high water an occulting white light.

Directions.—For entering Niagara river, see 1921 Canadian Sailing Directions for Canadian Shores of Lake Ontario, pages 79 and 80, covering chart No. 63.

Town of Niagara-on-the-Lake, Lincoln Co., on west side of mouth of river, has as conspicuous objects, Fort Massassauga with earthwork and blockhouse, the Queen Royal Hotel, and Presbyterian and Roman Catholic church steeples—is a station on the Michigan Central, and Niagara, St. Catharines and Toronto Electric road. Niagara Falls S.S. Line between Toronto and Queenston, calls frequently. A ferry runs to Youngstown. Population in 1921 was 1,357.

Shipping.—During the fiscal year 1921-22, 1,022 vessels register tonnage 1,117,906 entered and cleared the port. At Queenston, 5 miles up the river, where the Canada Steamship Lines have a wharf, during 1921-22, 657 vessels register tonnage 682,439 entered and cleared the port.

Oakville Harbour, Ont.—is at the mouth of Oakville creek—10 miles NE. of entrance to Hamilton harbour. The entrance to the harbour is between two nearly parallel piers. The N.E. pier 725 feet long extends 430 feet into the lake in a southerly direction 150 feet beyond the S.W. one. At outer end of N.E. pier at right angles to it, is a 140-foot extension, running N.E. At the outer end of the S.W. pier the width between the piers is 160 feet, slightly less inside.

A dredged channel of 12 feet depth starts from a point a little more than $\frac{1}{2}$ mile S. 42° E., from southwest corner of N.E. pier at which point it has a width of 100 feet which gradually diminishes to 50 feet between the piers, and maintains this width in a northerly direction to mouth of Oakville creek.

Light.—Near outer end of N.E. pier, a white, hexagonal wood tower shows 39 feet above high water, a white group occulting light.

Storm Signals are hoisted from a mast on bank 360 feet N.E. of inner end of N.E. pier.

Town of Oakville, Halton Co., at mouth of creek; is a residential town with a number of fine summer houses—is a station on Hamilton section of C.P.R. and Toronto and Hamilton branch of Grand Trunk Railway. Population in 1921 was 3,298. An electric railway connects it with Hamilton.

Oshawa Harbour, Ont.—on north shore of lake Ontario—is about 7 miles westward of Port Darlington harbour. The bay is very open and not much frequented by shipping. On north shore of bay is a pier with a depth of about 12 feet at the end.

Light.—On pier head, a mast shows 40 feet above high water, a red fixed light.

Town of Oshawa, Ontario, Co., is about 2 miles inland in a N.W. direction from the pier in the bay; is an important industrial town and a station on main lines of C.P.R. and Canadian National systems. An electric road connects it with the pier.

In 1920 Oshawa had 78 industrial establishments, employing 4,094 hands; value of products \$36,061,962. The population in 1921 was 11,940.

Trade for fiscal year 1921-22, value of imports \$7,790,506; exports not given.

Picton Harbour, Ont.—is at the SW. end of Picton bay which runs in a S.W. direction for about $2\frac{3}{4}$ miles from west end of Adolphus reach, bay of Quinte, to the wharves at Picton. Picton bay about 1,000 yards wide at its mouth gradually narrows to 350 feet near the head. The dredged 11-foot channel into Picton wharves is marked by wooden spar buoys.

Wharves.—At Chimney point on west side of harbour 2,800 feet from the end is a wharf 100 feet by 80 feet; inside this wharf are several others with warehouses and coal sheds.

Ferry.—A ferry runs between Picton and Deseronto, 12 miles to the northward.

Town of Picton, Prince Edward Co., is built close to the head of the harbour. Is terminal of the Central Ontario Division Branch of the Canadian National Railways.

Canada Steamship Lines, Montreal to Toronto, calls weekly (freight only). A daily automobile service is operated to Belleville, 17 miles distant.

Population in 1921 was 3,356.

Trade.—For fiscal year 1921-22, value of imports \$226,060; exports not given.

Shipping.—During the fiscal year 1921-22, 153 vessels register tonnage 17,846 entered the port; 155 vessels, register tonnage 18,287 cleared.

Port Dalhousie, Ont.—is at northern entrance of Welland canal. The entrance to the harbour is between two parallel concrete piers, 200 feet apart. The east pier, 2,300 feet in length, extends out 1,500 feet from the shore, 250 feet beyond the outer end of the west pier.

In the approach to the harbour, a cut, the sides of which are nearly in the alignment of the entrance piers, has been dredged to a least depth of 16 feet for a distance of about 1,000 feet northward of the outer end of the east pier. The least depth in mid-channel between the entrance piers is 14 feet, but 11 feet of water will be found 70 feet from the east pier, about 200 feet north of the rear light, and also 10 feet, abreast of the same light, 70 feet from the west pier.

Southward of the inner end of the entrance piers, the harbour widens out and a central pier divides it into two parts; lock No. 1 of the old canal now out of use, is on the west side, and lock No. 1 of the present canal is on the east side of the inner part of the harbour.

The harbour has a greatest width of 725 feet and the distance from the inner end of the east pier to lock No. 1 of the present canal is 2,000 feet.

On the west side there are depths of 9 and 10 feet; on the east side and in that part of the harbour towards the entrance of the present canal, the least depth is 12 feet. The Niagara, St. Catharines and Toronto railway runs down along the wharves on the west side of the harbour, and the Grand Trunk railway along the wharves on the east side, where it has a station.

Range Lights.—Front.—On the enlarged outer part of the east pier, is erected a white square wood tower, from which, at a height of 42 feet above the lake, is exhibited a fixed red light visible in clear weather from a distance of 8 miles. The light is visible from the direction of the harbour as well as from all points of approach lakeward.

Rear Light: On the beach close to the east pier is erected a white octagonal wood tower, from which, at a height of 56 feet above the lake is exhibited an occulting white light.

Lights on West Pier.—The west pier is well lighted by a row of electric white lights, which can be seen a long distance out.

Fog Signal.—A diaphone is operated in connection with front light.

Storm Signals are hoisted from a mast near the north end of the central pier.

Wharves.—There are two wharves in the harbour with railway sidings, one belonging to the Grand Trunk Railway and the other to the Canadian

Northern Railway, with small freight sheds upon them. There is a coal dock, and coal is landed there for the use of steamers calling at the port.

Muir Dry Dock.—A gravity dry dock is on the west side of the old canal close above the old lock. Two vessels side by side can be docked at the same time, of lengths of 225 and 185 feet. The entrance gate is 45 feet in width and has $10\frac{1}{2}$ feet of water over the sill.

Coal.—Steam coal can be obtained in limited amount from The Hutchison Estate coal chutes on south end of East entrance pier.

Supplies.—Provisions or small supplies can be ordered for delivery further up the canal.

Communication.—Station on Welland Branch of Grand Trunk Railway and Niagara, St. Catharines-Toronto electric road. Niagara St. Catharines and Toronto Navigation Co. calls six to twelve times a week.

Canada Steamship Lines, Ltd., Montreal to Detroit, calls weekly (freight only).

Town of Port Dalhousie in Lincoln Co., is built along the lake shore, 9 miles SW. of Niagara river entrance. The principal industry is the plant of the Maple Reef Rubber Co. situated between the first locks of the old and present canal. Population in 1921 was 1,524.

Shipping.—During the fiscal year 1921-22, 522 vessels, register tonnage 308,372, entered the port; 552 vessels, register tonnage 299,793, cleared.

Port Hope Harbour, Ont.—On north shore of lake Ontario about 63 miles east of Toronto, Port Hope is an artificial harbour and consists of an inner basin 420 feet wide and 640 feet long, an outer harbour, and an eastern arm, 1,400 feet long, and of an average width of 75 feet, into which Smith creek empties. The east pier, irregular in alignment, extending southward from the foot of Mill street, with the middle pier, forms the east arm, and protects the outer harbour. The west breakwater, also irregular in shape, converges towards the east pier, leaving a narrow entrance 150 feet wide and 250 feet long. The middle pier separates the east arm from the inner basin.

Depths.—In 1916 the entrance into the outer harbour, and its approach, were dredged and swept to a depth of 14 feet. The same dredging and sweeping, to the same depth, were continued along the east pier for a width of 175 feet and extended 225 feet into the east arm. North of this it shoals up rapidly.

In June, 1921, the Department of Public Works, Ottawa, reported that the above dredging had filled in, and that the channel had then a least depth of 8 feet.

Along the west and the north sides of the inner basin, there is $8\frac{1}{2}$ feet of water. Along the west side of the middle pier 1,600 feet in length, depths are as follows: in the inner basin, 8 feet; in the entrance to the inner basin, 11 feet; in the outer harbour, 12 feet. Along the south end of the middle pier, there is 11 feet. At the wharf on the west side of the entrance into the inner basin there is 15 feet.

The west part of the outer harbour is shallow.



Port Hope, Ont., Harbour.

Light.—On the east pier, 115 feet from its outer end, a white, square tower shows at a height of 40 feet above the lake, a fixed red light, visible 4 miles. The light is watched, but is not under government control.

Hand fog bell in connection.

Day Beacon is erected on the south end of the west breakwater, at the entrance of the harbour.

Storm Signals are hoisted from a mast erected on the east pier, 775 feet from its outer end.

Lifeboat at this port is manned by a volunteer crew.

Elevators—Industries.—On the harbour front are 2 elevators, a factory and the plants of the Standard Ideal Manufacturing Co. and the Dominion Canning Co.

Communication.—Is a station on main line of Canadian National Railways on lake shore line of C.P.R. and on Port Hope and Lindsay branch of the Grand Trunk Railway. Small vessels of Canada Steamship lines between Toronto and Bay of Quinte ports, call.

Town of Port Hope.—Durham Co., is built on shore of harbour and extends westward to summit of a hill about 175 feet high. It is the seat of the famous Trinity College school; steeples of the Roman Catholic and Methodist churches and tall chimney of Waterworks pumping house are conspicuous marks. Population in 1921 was 4,456.

Trade.—For the fiscal year 1921-22, value of imports \$285,450; exports not given.

Shipping.—During the fiscal year 1921-22, 10 vessels, register tonnage 1,649, entered and cleared the port.

Toronto Harbour, Ont.—on north shore of lake Ontario, is contained between the shores of Toronto island, a low sandy island on the southward and westward, and the harbour front of Toronto on the northward and eastward. The island is fairly well covered by trees with a large number of summer cottages on the lake fronts.

The area thus contained is about 2 miles in length with greatest width of about 1 mile.

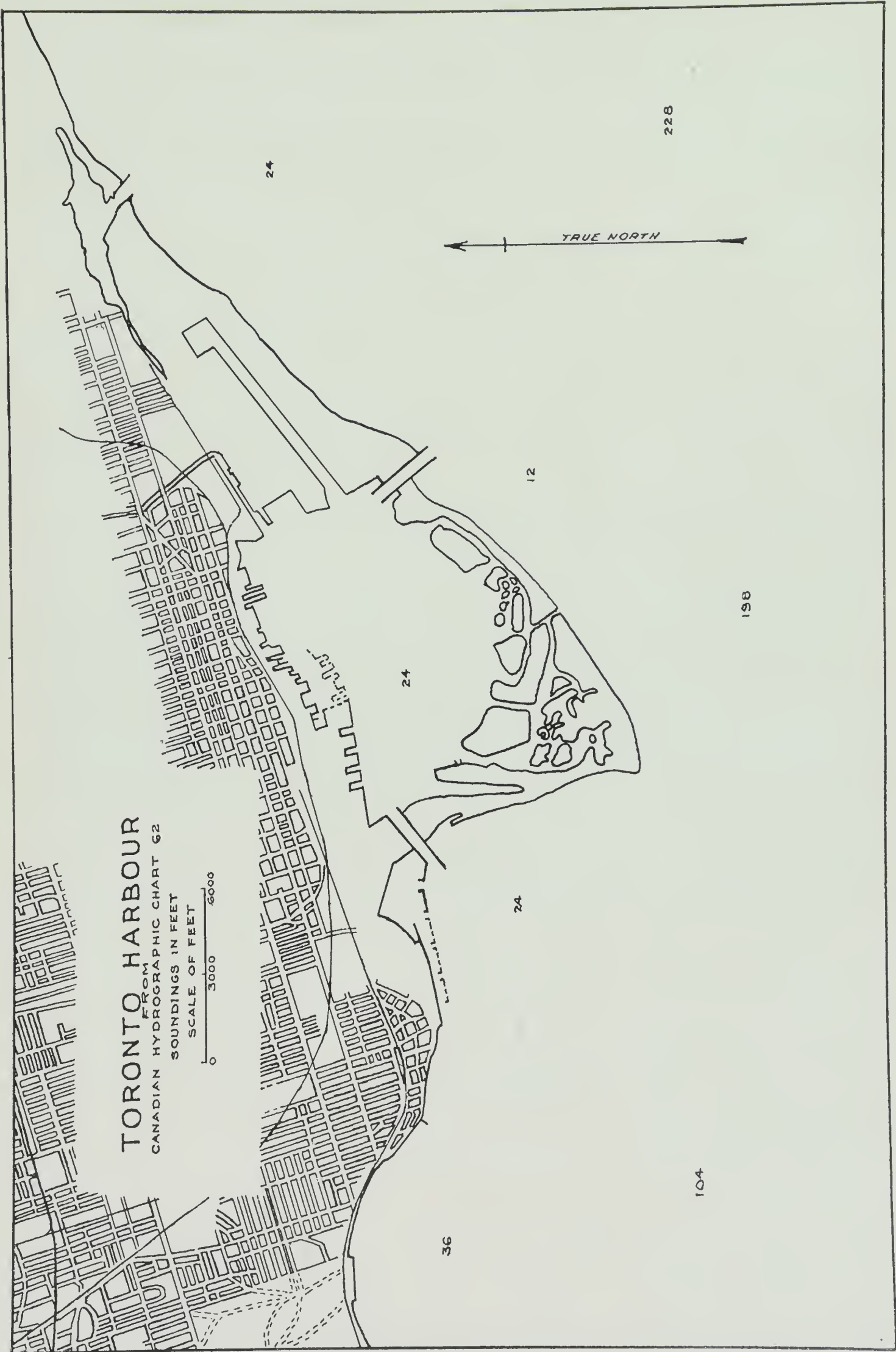
The harbour has two entrances, the east entrance and the west entrance.

East entrance—Is easily picked up in the day time by two high steel electric power transmission towers one on either side near the entrance piers, two parallel piers 2,550 feet long and 400 feet apart, at the SE. corner of the island, they extend 1,250 feet SE. into the lake and 700 feet NW. into the harbour. The channel between the piers and approaches on both sides have a least depth of 14 feet.

West entrance—At the NW. corner of the harbour, consists of two parallel piers 400 feet apart, the southern one 2,580 feet long extends 1,150 feet WSW. into the lake, 400 feet beyond the outer end of the northern pier.

In the channel between the piers and in the approaches there is a least depth of 12 feet.

Harbour Depths.—The greatest depths in the harbour are from 27 to 30 feet. The 18-foot line is from 500 to 1,200 feet off the south side and half a



mile off the west side. The north and east sides can be approached to the wharves by any lake sized vessel.

Keating Channel.—Runs in 2,400 feet from the NE. part of the harbour, is 150 feet wide, with depth of 15 feet at the entrance, inside the depths decrease from 13 feet at the bascule bridge near the west end to 9 feet at the east end of the channel and mouth of the Don river. Each abutment of bridge has a fixed white light, a fixed red light on bridge means it is lowered, a fixed green light that it is raised.

Ship Channel.—The entrance is 300 yards northward of the inner end of east entrance to harbour, is 400 feet wide with least depth of 22 feet for a little over a mile to a temporary dam near the east end.

A dredged basin 1,100 feet square is close eastward of the dam. The Baldwins Canadian Steel Corporation, Ltd., plant is on the northern side of the channel.

Ashbridge Bay.—Coatsworth cut, about $\frac{3}{4}$ of a mile NE. of the turning basin in the ship channel, between two short piers 450 feet part, is the entrance



Toronto Harbour. View of Ship Channel Looking East.

to Ashbridge bay, at one time $2\frac{1}{2}$ miles long and $\frac{1}{2}$ mile wide but now almost entirely reclaimed. The cut is shallow and can only be used by small craft.

Harbour Commission.—The harbour is under a commission consisting of five commissioners, three appointed by council of the city of Toronto, one by Governor-in-Council and one by Governor-in-Council upon the recommendation of the Board of Trade. The commissioners report annually to the Minister of Marine and Fisheries.

Range Lights, West Entrance.—Front light—On outer end of southern pier a white, square concrete building shows 23 feet above high water a red fixed light, fog bell attached.

Back light on south pier near its inner end, a white square steel skeleton tower shows 45 feet above high water a red fixed light.

Range Lights, East Entrance.—Front light—On outer end of East pier a red steel skeleton tower shows 43 feet above high water a red occulting light. Fog bell attached.

Back light from SW. corner of electric power transmission tower on east side of entrance is shown 69 feet above high water a red fixed light.

Light.—On Gibraltar point, S.W. extremity of Toronto island, 1,700 feet, 54 true from S.W. entrance of point, a white hexagonal stone tower shows 66 feet above high water a white occulting light.

Buoys.—The edge of the shore bank off Gibraltar point is marked by can and spar buoys.

A red spar buoy marks a 2 foot spot 300 yards N.E. of back West Entrance light. A black spar buoy, to guide ferry boats, is moored N. 60° E. $\frac{1}{4}$ of a mile off Haulan point.

A black spar buoy is moored 900 feet from outer end of Royal Canadian Yacht Club wharf on south side of the harbour.

A red spar buoy marks east side of channel with 15 feet least water leading to Rogers coal wharf, at N.E. corner of harbour.



Toronto Harbour. Western Breakwater Looking West.

A red spar buoy is at the outer east side of the East Entrance, a black spar buoy at the inner west side.

Industrial Areas.—In the Eastern Harbour Terminals 477 acres of land have already been reclaimed and laid out in blocks with streets and railway reservations. Twenty-seven industries are now located in this district, the plants and buildings with an approximate estimated value of \$8,000,000, have been erected and are in operation. Paved roadways, varying in width from 28 feet to 50 feet together with concrete sidewalks have been constructed, sewers and watermains have also been laid.

The district is served by the street railway system of the Toronto Transportation Commission and 12 $\frac{3}{4}$ miles of railway main leads and sidings have been built giving industries connection with the Canadian National Railways.

A ship channel, 6,800 feet long and 400 feet wide, terminating in a turning basin 1,100 feet square runs through the heart of the district, while the north

end is served by Keating's channel, a slip approximately 3,000 feet long and 200 feet wide, at the mouth of which is a pier some 600 feet long and 176 feet wide; the channel provides six miles of wharf accommodation.

In the Central Harbour Terminals a new harbour head line is to be established, at a distance of approximately 1,100 feet south of the old pierhead line, along which slips 600 feet long and 200 feet wide with piers of varying length between will be constructed providing $2\frac{1}{2}$ miles of wharves, behind which 130 acres of land are being reclaimed; streets being laid out and railway sidings constructed to serve the industries located in this district.

A new transit shed was erected last year for the Canada Steamship Lines. This is served by a new road connecting with the streets of the city and by a railway siding connecting with the Canadian National Railways and the Canadian Pacific Railway.

The Commissioners in their development are so designing their wharves that they may be equipped with every modern facility for the economic and rapid unloading and loading of vessel cargoes, both in the industrial districts and along the commercial waterfront of the inner harbour, together with adequate accommodation for passenger vessels, all of which has been planned, keeping in mind Toronto's strategical position as a manufacturing and distributing centre.

All wharves are being constructed to provide a present navigable depth of 24 feet with an ultimate depth of 30 feet, and special attention is given to the better co-ordination of rail and water traffic.

Wharves and Docks.—On the north side of the harbour these have a frontage of about 2 miles and from west to east are from the inner end of the north pier of the west entrance—a concrete wharf, 800 feet long, from the inner end of which concrete docks extend 4,700 feet eastward. The Dominion Shipbuilding Co. (no longer operating) is on the westernmost of these docks.

Canada Steamship Lines, Ltd., pier at foot of Bay street is 450 feet by 375 feet, used chiefly for freight but also by passenger boats, has depths of 10 to 13 feet alongside, and shed with 65,000 square feet of floor surface. The Harbour Commissioners administration buildings are on south end of pier.

Toronto Ferry Company wharf at foot Bay street, ferry boats run regularly to Hanlan point, SW.; Island park south; and Wards island SE wharf; illuminated at night.

Dominion Government public wharf at foot of Yonge street. In slip eastward, 700 feet long are depths of from 10 to 6 feet. Along the south end of wharf, 225 feet, the depth is 14 feet.

Canada Steamship lines, 2 wharves with slip between with from 12 to 8 feet of water. Most of the company's passenger boats leave from these wharves.

Toronto Electric Light Co.'s wharf at foot of Victoria street, outer end has a small slip 300 feet wide.

Conger coal dock at foot of Church street, at the outer end of the slip at the foot of the street depth is 10 feet, inner end is shallow. Along face of wharf the depth is 9 feet for 150 feet, then diminishes to 7 feet.

Polson Iron Works—on pier 900 feet long, 250 feet wide, extending from foot of Shelbourne street. At outer end of pier east side the depth is 12 feet

gradually diminishing to 2 feet at inner end. Along the eastern part of the outer side and in the slip on the east side the water is shallow.

Rogers coal wharf is immediately east of Polson's east pier; a narrow channel with 15 feet least water leads to it.

The wharf of the Toronto Coal and Dock Co. is on south side of entrance to Keating channel—has 15 feet depth of water on north side.

The club house and wharf of the Royal Canadian Yacht Club are on the south side of the harbour, about midway between the east and west entrances.

Railway tracks run at the back of all these wharves and docks, with sidings to them with the exception of the Yacht Club wharf.

Dry Dock.—The Toronto Dry Dock Co. have installed a floating dry dock at the head of Keating channel, 180 feet long, 45 feet wide, capacity 1,000 tons, equipped for the repair of wood and steel vessels.

Repairs.—Extensive repairs to machinery can be made at the Polson Iron Works.

Wireless Station.—A station operated by the Marconi Wireless Telegraph Co. and available day or night, is situated on Gibraltar point, range 350 sea miles; call letters V.B.G.



Toronto Harbour. View in Central Harbour.

Life-Saving Station is on the west side of the east entrance; the boat is manned by a regular crew, and is instantly available in cases of emergency.

Storm Signals are hoisted from a mast near the back range light on the east side of the east entrance.

Communication.—Toronto is the railroad centre of the province, from it the Canadian National and Canadian Pacific railways have important branch lines. The Canada Steamship Lines Ltd. operate a regular passenger and package freight service to and from Hamilton, Grimsby, Queenston, and Montreal and ports on north shore of lake Ontario and bay of Quinte. The Niagara St. Catharines and Toronto Navigation Co. operates a similar service to and from Port Dalhousie.

City of Toronto, York Co., the capital of the province of Ontario; is an important educational centre, seat of Toronto University, Trinity College and Upper Canada College. Some of the conspicuous building marks are: tower of Upper Canada College, steeples of St. James', St. Michael's, and St. Mary's churches, square tower of city hall with clock dial, and the Royal bank and Canadian Pacific Railway buildings.

The Custom house is at the corner of Yonge and Front streets, one block north of middle of harbour front.

In 1920 Toronto had 3,383 industrial establishments employing 106,630 hands, value of products \$588,969,742.

Population in 1921 was 521,893.

Trade.—For the fiscal year 1921-22, value of imports \$162,017,454; of exports \$236,402.

Shipping.—During the fiscal year 1921-22, 2,035 vessels register tonnage 1,419,572 entered the port; 1,910 vessels register tonnage 1,619,046 cleared.

Lloyd's Agents.—W. G. A. Lambe & Co., 24 Front Street East, Toronto, Ont.

Lloyd's Surveyor.—John Stephen, 26 Ellsworth Avenue.

Trenton Harbour, Ont.—On the north shore of the bay of Quinte at the mouth of Trent river is entered by two dredged channels one from the eastward and the other from the southward.

The eastern channel is about $2\frac{1}{2}$ miles long, and 150 feet wide, and dredged to a least depth of 13 feet, the channel is crooked and leads to 200 yards south of Gilmour and Co's wharves.

The southern channel called Dock channel leads in a straight line from Murray canal on the south to Trent river entrance on the north. It is 2 miles long, 200 feet wide, with least depth of 8 feet, and leads to Gilmour & Co's wharves.

Lights—Buoys.—For description of range lights at Trenton and buoys in channel approaches, see 1921 Canadian Hydrographic Office "Sailing Directions for the Canadian Shores of Lake Ontario," pages 99 and 100, covering chart No. 69, also Department's 1923 "List of Lights and Fog Signals on the Inland Waters."

Directions from Belleville to Trenton.—See 1921 Canadian Hydrographic Office "Sailing Directions for the Canadian Shores of Lake Ontario," pages 100 and 101, covering chart No. 69.

Wharves.—The principal wharves are situated below the highway bridge. Pollys wharf with 200 feet frontage along the western side of the Trent river, is situated immediately southward of the highway bridge; 12 feet may be carried to this wharf. Gothard coal wharf is contiguous to and at right angles to the latter, westward; 8 feet may be carried to the eastern part of the wharf.

The Trenton Cooperage Mills Company wharf is situated 165 feet southward of Pollys and Gothard wharves. The outer end of the wharf is 120 feet long. The approach to it has been dredged to a least depth of 10 feet. In the slip between the Trenton Cooperage Mills Company wharf and that of



Trenton, Ont., Harbour from Mount Pelion.

Gothard coal dock, is situated a marine railway which can handle vessels 125 feet in length.

Gill and Fortune wharf, with 530 feet frontage along the eastern side of the river, is situated immediately southward of the highway bridge; 11 feet may be carried to the wharf.

Gilmour and Company wharves are situated on the eastern entrance point of the Trent river, about one-third of a mile southeastward of the highway bridge. They consist of several piers covering a frontage of 2,000 feet along the east side of the river. About 12 feet may be carried to their outer ends.

The least depth is 13 feet for a width of about 600 feet along the eastern side of the mouth of the Trent river from Gilmour and Company wharves to the highway bridge, and for the full width of the river near and southward of the highway bridge. Southward of the Cold Storage wharf, on the western side, the mouth of the river is shallow.

Communication—Bridges.—Trenton is a station on the main line of the Canadian Pacific and Canadian National railways, a branch line of the latter between Maynooth and Picton passes through Trenton.

Near its mouth the Trent river is crossed by a highway bridge with swing span, next up stream is the Canadian National Railways bridge also with swing span, then the C.P.R. bridge, stationary, and about $1\frac{1}{2}$ miles above the highway bridge the G.T. Railway bridge, stationary with clearance of 33 feet at low water.

The Town of Trenton, Hastings Co., is built on both shores of the Trent river at its mouth—had in 1921 a population of 5,902;

Trade.—Value of imports for fiscal year 1921-22, \$464,091.

Shipping.—During the fiscal year 1921-22, 71 vessels, register tonnage 11,349 entered the port; 44 vessels, register tonnage 7,824 cleared.

Welland Harbour, Ont.—is on Welland river and canal. At Welland the Welland river and the canal have a connection 300 feet long via a lock at the aqueduct—the river is 50 to 100 feet in width.

City of Welland, Welland Co.—Had in 1921 a population of 8,654. In 1920 Welland had 89 industrial establishments, employing 3,632 hands, value of products \$26,285,060.

Is a station on Welland branch of G.T.R.; Fort Erie division of Michigan Central; Toronto-Hamilton, and Buffalo line, Wabash road, and the Niagara. St. Catharines and Toronto Electric Railway.

Trade.—For the fiscal year 1921-22, value of imports \$7,252,616; of exports \$708,736.

Shipping.—During the fiscal year 1921-22, 7 vessels register tonnage 10,425 entered the port; 9 vessels, register tonnage 12,094 cleared.

Whitby Harbour, Ont.—is on the north shore of Lake Ontario about 30 miles east of Toronto, is triangular in shape with apex pointing north. The harbour is $\frac{1}{2}$ a mile long and $\frac{1}{2}$ a mile wide. The south side is formed by a sand pit and breakwater; from the east end of the breakwater the west pier extends 650 feet south, the east pier is 395 feet long and runs parallel to the west one

at a distance of 280 feet, the entrance to the harbour is between the piers, and 10 feet can be carried through.

The harbour front comprises 1,500 feet of wharves on which are built an elevator, warehouse and coal sheds—for 260 feet off the wharves there is a dredged depth of 12 feet.

The plank tops on the entrance piers are being replaced by cement.

Light.—On the west pier 50 feet from its outer end, a white octagonal wood tower shows from a height of 37 feet above high water, a white fixed light.

The Town, Ontario Co., lies $1\frac{3}{4}$ miles north of the harbour and is a station on the main line of the C.P.R.

Had in 1921 a population of 2,800.

Trade.—Value of imports in fiscal year 1921-22, \$206,240.

Shipping.—During the fiscal year 1921-22, 8 vessels, register tonnage 1,912 entered the port; same number and tonnage cleared.

LAKES ERIE AND ST. CLAIR, DETROIT AND ST. CLAIR RIVERS

Amherstburg Harbour, Ont.—is near the mouth of the Detroit river opposite Bois Blanc island. The channel between Bois Blanc island and Amherstburg is 600 feet wide with depth of 21 feet. The Livingstone channel is now under improvement to 450 feet minimum width, and depth of 22 feet. Freight steamers passing through the Detroit river must use the Amherstburg channel up-bound and Livingstone channel downward bound. There is a depth of about 19 feet along the entire dock frontage connecting with the main river channel.

Anchorage.—Off the southern end of Bois Blanc island on Amherstburg side of the channel, is in 19 feet and well sheltered.

Light.—On foot of Bois Blanc island a white circular stone tower with dwelling near by shows from a height of 56 feet above high water a fixed white light.

Range Lights and Float Lights.—For description of Amherstburg and Elliot point range lights and Hackett reach, Amherstburg channel, and Limekiln Crossing channel float lights, see Department's 1923 "List of Lights and Fog Signals in Inland Waters."

Docks.—Are continuous for about 1,500 feet, for 300 feet on the southern end are of concrete, this part is owned and maintained by the Dominion Government and on it is the buoy service depot and supply station of the Marine Department.

Storm Signals.—Are shown from a mast at entrance to dock at waterworks park.

Town of Amherstburg, Essex Co., is a station on the Amherstburg division of the Michigan Central road and has electric railway connection with Sandwich, Windsor, and Walkerville, and steamboat connection with all lake ports. The town and the island serve as a pleasure resort during the summer months; a coaling station of the Mullen Coal Co. is located at Amherstburg. Population in 1921: 2,769.

Trade.—For the fiscal year 1921-22, the value of imports was \$850,661; of exports \$88,002.

Shipping.—During the fiscal year 1921-22, 948 vessels register tonnage 314,240 entered the port 955 vessels register tonnage 317,167 cleared.

Chatham Harbour, Ont.—is about 19½ miles upstream from the mouth of the river Thames which empties into lake St. Clair at its S.E. end.

The river from its mouth to Chatham has been widened at the bends, sunken obstructions removed, and a channel with least depth of 10 feet dredged to the wharves at Chatham.

For vessels of 5 feet draught the Thames river is navigable to Louisville, about 7 miles above Chatham.

Range Lights.—At mouth of Thames river, south shore, a white circular stone tower shows 55 feet above high water a white fixed light.

A red square wood tower 300 feet, 320° true from main light, shows 22 feet above high water a white fixed light.

The lights in line lead over the bar.

Buoy.—A black steel, cylindrical gas buoy topped by pyramidal steel frame, is moored in 14 feet of water, $1\frac{1}{2}$ miles, 320° $30'$ true from Thames river main light.

Wharves.—There are about 10 wharves at Chatham, including the city wharf with freight shed. There is a railway siding to one of the wharves.

Communication.—Railway connection with all parts of Canada and the United States by Grand Trunk, Canadian Pacific and Pere Marquette Railways, and by steamboat lines with Windsor and Detroit.

City of Chatham, Kent Co., is a growing town of some industrial importance; the population having increased by about 3,000 in the last decade.

Population in 1921, 13,256.

In 1920 Chatham had 120 industrial establishments employing 2,302 hands, value of products \$17,260,430.

Trade.—For the fiscal year 1921-22, value of imports \$5,054,235; of exports \$17,947.

Shipping.—During the fiscal year 1921-22, 104 vessels register tonnage 22,247 entered the port; 106 vessels register tonnage 23,389 cleared.

Courtright Harbour, Ont.—On east shore of St. Clair river—has a harbour dock frontage of about 1,000 feet, with depths alongside of from 15 to 20 feet. The Michigan Central Road maintains a steam ferry between Courtwright and St. Clair.

Communication.—The village of Courtright has postal, telegraph and telephone communication and is a station on St. Clair division of Michigan Central Road, and on Erie and Huron division of Pere Marquette.

Shipping.—During the fiscal year 1921-22, 242 vessels register tonnage 123,943 entered the port; 232 vessels register tonnage 111,707 cleared.

Kingsville Harbour, Ont.—On north shore of Lake Erie about $10\frac{1}{2}$ miles NE. of Colchester reef light—is a small basin formed by 2 converging piers about 160 feet apart at entrance and 800 feet apart at the shore line. The east or landing pier extends 840 feet southerly from the shore, and the west pier or breakwater 1,140 feet SE. to opposite the end of the east pier and thence southerly about 400 feet. Both piers are of stone filled crib work.

The entrance channel is dredged to a depth of 12 feet for length of 1,100 feet and width of 40 feet. The berths alongside the east pier in the harbour have a depth of 10 feet for width of 75 feet. On the east pier is a freight shed and waiting room. Is a good harbour of refuge.

Leading Lights.—Front—On outer end of east pier a mast shows 27 feet above high water a red fixed light. Hand fog horn attached.

A white square wood tower on top of bank, 1,060 feet, 349° true from front, shows 55 feet above high water, a similar light. Lights in line lead to entrance.

Town of Kingsville, Essex Co., is an important shipping point for fish and farm products; has postal, telegraph, and telephone communication; is station on

Lake Erie division of Pere Marquette road, and on Windsor, Essex, and Lake Shore Electric road. Windsor and Pelee island SS. Co. calls daily. Population in 1921 was 1,783.

Shipping.—During the fiscal year 1921-22, 231 vessels, register tonnage 53,875, entered and cleared the port.

Leamington Harbour, Ont.—On north shore of lake Erie on Pigeon bay, about 7 miles east of Kingsville is an artificial harbour formed by 2 piers. The new or east pier used as a dock is 1,061 feet long, the outer 250 feet cribwork—has an L 70 feet long at its outer end, the inner 811 feet of the pier is oak piling. The old or western pier 400 feet west of east pier is used as a breakwater. The maximum draught of vessels using the east pier and harbour is 11 feet.

Light.—On shore, near old pier, a white, square, wood tower shows 48 feet above high water, a white fixed light. Fog horn in connection with light.

Town of Leamington, Essex Co.—Has telephone, mail and boat service to Pelee island; is a station on Michigan Central, and on Erie division of Pere Marquette road, and Windsor, Essex and lake Shore Electric road. Windsor and Pelee Island SS. Co. calls daily. Population in 1921 was 3,675.

Shipping.—During the fiscal year 1921-22, 405 vessels, register tonnage 98,182, entered and cleared the port.

Point Edward Harbour, Ont.—is at the exit of St. Clair river from lake Huron adjoining town of Sarnia. There is a channel about 21 feet deep dredged along the front of the docks.

Anchorage may be had abreast of Port Huron and Sarnia.

Range Lights.—Front—on beach 500 feet E. from head of St. Clair river, a white square wooden tower shows 35 feet above high water, a red fixed light. A similar tower 579 feet, 180° true from front shows a similar light.

Lights in one lead in to head of St. Clair river from lake Huron, should be kept in one ahead till line is intersected by line of Fort Gratiot range.

Docks.—The docks are continuous along the river for about 3,000 feet and divided as follows: the dock at which fish tugs and other small boats lie, 600 feet in length; iron ore dock, 300 feet; shed docks, 1,500 feet, where general merchandise and cargo is handled, length of shed, 800 feet; elevator docks, 600 feet long, one elevator, capacity 500,000 bushels. The average depth of water along the docks is 22 feet. At this place the Hamilton Steel and Iron Co. has established a large plant. Two railway sidings are laid on the ore docks, two lead to the freight sheds, two to the grain elevator, and one siding along the remainder of the docks.

Radiotelegraph.—A station is operated all year; range 350 nautical miles; call letters V.B.E.

Communication.—Postal—telegraph and telephone.—Is important shipping terminal of Grand Trunk Railway, and port of call for large steamers.

Shipping.—During the fiscal year 1921-22, 763 vessels register tonnage 697,586 entered the port; 759 vessels register tonnage 685,341, cleared.

Port Burwell Harbour, Ont.—On north shore of lake Erie at mouth of Big Otter creek, about 40 miles west of Long Point light; is after Port Colborne the best harbour on the north shore of lake Erie.

Piers and Breakwaters.—The entrance is between two piers running south from the shore line. The east pier is 1,360 feet long with a short "L" at its outer end. The west pier is also in the form of an L with a short outer head; the heads of the two piers are exactly opposite one another.

A breakwater runs from the outer end of the west pier first about 275 feet westward, and then 1,200 feet southward—it is of cribwork with a concrete superstructure. The width at the entrance of the two piers is 155 feet narrowing to 125 feet, 500 feet further in, and then widening to the mouth of creek.

There is a depth of 21 feet in the outer harbour and 18 feet in the inner harbour. The entrance channel requires frequent dredging.

Lights.—Port Burwell light, fixed white, is on the east side of the harbour, 770 feet north of the lake shore and 332 feet east of the harbour basin.

On outer end of west breakwater is a white occulting light.

The entrance range consists of two fixed white lights, the front light on outer end of east pier, the back light on east pier 530 feet, 356° true from front. A diaphone in connection with back light, and if diaphone out of commission, a hand fog bell.

Storm Signals.—A storm signal mast is on a height south of the main lighthouse.

Radiotelegraph.—A station is operated all year. Call letters V.B.F., working distance 350 sea miles.

Port Burwell, Elgin county is a station on the Port Burwell branch of the C.P.R. A car ferry operates between the port and Ashtabula, Ohio. On each side of harbour is a car ferry slip and a few wharves further up with about 16 feet water.

Shipping.—During the fiscal year 1921-22, 13 vessels, register tonnage 494, entered the port; 14 vessels, register tonnage 503, cleared.

Port Colborne Harbour, Ont.—is at the east end of lake Erie, and is the lake Erie entrance to the Welland canal.

Outer Harbour and Breakwater.—The west breakwater 4,424 feet long runs from the entrance a little north of west towards Sugar-loaf point to shallow water; it is of cribwork, covered with concrete $1\frac{1}{2}$ feet thick, and has a bank of large stones along the south face. At its outer end is a block 100 feet by 60 feet, and 15 feet high above water on which is a lighthouse.

The east breakwater starts 625 feet SE. from end of west breakwater and thence extends a little north of east 2,460 feet. It is of timber cribwork with concrete cribwork superstructure, and has rip-rap protection along its outer southern face and west end.

An area of about 70 acres protected by the breakwater has a depth of 20 feet.

A slip 600 feet long by 200 feet wide and 20 feet deep enclosed by two piers 600 feet by 200 feet and joined at head by a pier 100 feet wide forms an extension of the west pier, and on west pier of the slip is a transfer elevator with a railway siding.



Entrance Channel and Canal Basin.—The entrance channel to inner basin and canal is between two piers 2,200 feet long and is 500 feet wide at the outer ends of piers and narrows to 150 feet at inner light.

The east pier is built of isolated cribs and at its outer end is an octagonal beacon—vertically striped red and white and topped by a globe. The west pier is continuous cribwork. The inner basin is 200 to 300 feet wide and about 2,000 feet long to the guard lock.

The plan of improvement embraces—new concrete docks along both sides and a depth of 15 feet at north end of basin and 16 feet at the south end. On east dock of the canal basin are coal chutes for loading and unloading vessels.

Lights.—The front light on outer end of west breakwater shows from a height of 50 feet above high water, a white group occulting light, diaphone attached.

The back light on east side of Fares street, 4,735 feet, $270^{\circ} 30'$ true from front light, shows from a height of 93 feet above high water, a white, with red sector, fixed light.

On outer end of east breakwater is a white occulting light.

Gas and Bell Buoy.—A vertically striped black and white steel gas and bell buoy showing an occulting white light, is moored in lake Erie on the line of the range lights and 3 miles from the front light.

Storm Signals are displayed from a mast on east side of harbour 500 feet south of the canal bridge.

The Town of Port Colborne, Welland county. Has large works designed to enable vessels drawing 20 feet to enter the harbour and transfer their cargoes through elevators into vessels navigating the canal to Montreal, the head of ocean navigation.

It is a station on the Buffalo and Stratford and Welland branches of the G.T. Railway, and on the Niagara, St. Catharines and Toronto electric road, Port Colborne branch.

The town had in 1921 a population of 3,415 and in 1920 had 22 industrial establishments employing 448 hands. Value of products \$15,623,557.

Shipping.—During the fiscal year 1921-22, 1,234 vessels, register tonnage 1,680,116, entered the port; 1,229 vessels, register tonnage 1,673,185, cleared.

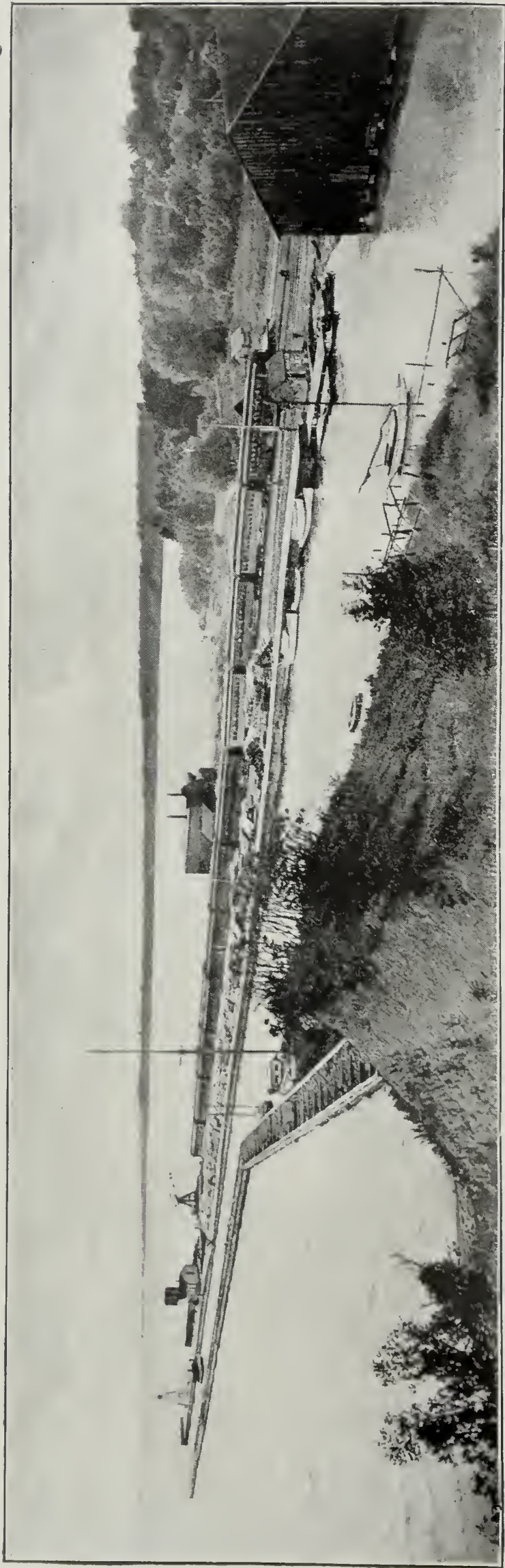
Port Dover Harbour, Ont.—is on north shore of lake Erie between Port Rowan and Port Colborne, at the mouth of the Lyn river. The harbour is entered between 2 piers 1,100 feet long and 70 feet apart. The depth between the piers is 12 feet. Half a mile out from the piers is good anchorage in 16 feet.

Range Lights.—Front—near outer end of west pier a white square wood tower shows 34 feet above high water, a red fixed light.

A white skeleton steel tower shows 45 feet above high water 1,668 feet, $22^{\circ} 30'$ true from front, a red fixed light.

Wharf.—The Grand Trunk railway has a wharf with siding and several freight sheds.

Communication.—Postal, telegraph and telephone. Station on Port Dover and Hamilton and Port Dover and Tavistock branches of Midland division of Grand Trunk Railway and on Lake Erie and Northern electric road.



Port Dover Harbour, Ont.

Shipping.—During the fiscal year 1921-22, 138 vessels register tonnage 5,098 entered the port; 139 vessels, register tonnage 5,178 cleared.

Port Stanley Harbour, Ont.—is an important artificial harbour of refuge on the north shore of lake Erie at the mouth of Kettle creek.

Breakwater and Piers.—The inner harbour entrance is formed by two cribwork piers, with continuous superstructure, extending southward into the lake and varying from about 90 feet apart at the outer end of the east pier to about 80 feet near the inner end of that pier, and leading into an enlarged basin at the mouth of Kettle creek. The east pier is 1,263 feet long and the west pier is about 2,150 feet long.

To the west of the outer end of the west pier is the Pere Marquette Railway slip, about 120 feet in average width, inclosed by a cribwork pier 783 feet long, extending on an irregular line from about the shore line to a point about 300 feet beyond the outer end of the west pier.

An L-shaped west breakwater, beginning at the outer end of the railway pier, extends 200 feet approximately SW. by W., and thence 800 feet approximately SE. by S. to its outer end, which is about on the prolongation of the west pier and 1,300 feet from its outer end.

An easterly detached breakwater, with timber substructure and concrete superstructure, has its outer end 1,080 feet S. by E. from the end of the east pier, providing a clear channel width of 350 feet at the breakwater entrance; it extends thence 1,200 feet to the northeast.

Channel and Basin.—The inner harbour is about 900 feet long and about 370 feet in maximum width at the middle of its length, contracting at either end. Its west side is formed by the inner portion of the west pier, and the east side by a curving shore line which recedes from the inner end of the east pier and again approaches the west pier at its inner, northerly end.

During 1920, the breakwater entrance, the outer harbour, and the car ferry slip were dredged to a least depth of 17 feet; the channel between the piers from the outer end of the west pier to 675 feet north of the Government warehouse was dredged to a least depth of 16 feet for a width of 50 feet; and the turning basin in the inner harbour was dredged to a least depth of 13 feet. The channel is subject to shoaling and requires periodical dredging for maintenance.

Lights.—Port Stanley Light, on the outer end of the west pier, is fixed white, visible 11 miles. The breakwater light, on the outer end of the west breakwater, is an occulting white light, visible 12 miles; a compressed-air fog alarm sounds blast 2 seconds, silent 13 seconds.

Life Saving and Storm-Warning Stations.—A life-saving station is located at this harbour. Storm warnings are posted at the post office, but no signals are displayed.

Grain Elevator.—A grain elevator with a capacity of 25,000 bushels stands on the west pier inside the basin.

Coal Ferry.—A coal ferry line, the Marquette and Bessemer, plies between Port Stanley and Conneaut, Ohio, carrying large shipments of coal for Pere Marquette Railway.

Port Stanley is an important fishing point, and a summer resort, and a station on the London and Port Stanley road.

Shipping.—During the fiscal year 1921-22, 20 vessels, register tonnage 720, entered the port; 25 vessels, register tonnage 914, cleared.

Rondeau Harbour, Ont.—An important harbour of refuge on the north shore of lake Erie, about $3\frac{1}{2}$ miles west of Pointe aux Pins; is an artificial harbour. Rondeau bay is 6 miles long by about 2 miles wide, and shallow except in the basin near the entrance.

Breakwater—Piers.—The entrance to the harbour at the southern end is protected by two decked cribwork piers. The east pier is 785 feet long and 530 feet from outer end to the shore line. The west pier is 2,100 feet long and 1,600 feet from outer end to shore line. The piers are parallel and about 250 feet apart. During gales strong currents run between the piers.

Extending westerly from the inner end of the west pier, is the slip of the Lake Erie Coal Co., with a car ferry landing at its north outer end. The slip is 700 feet long and about 60 feet wide at the head.

The depth of water between the southern piers in the channel is 18 feet, and about the same along the wharf of the Lake Erie Coal Co.

Lights.—Two lights form a range for entering the harbour—the front light, fixed, white, is on the outer end of the east pier. The rear light, white, fixed flashing, is 780 feet, 14° true from front light. Hand fog horn in connection.

An occulting red light is shown from the outer end of the west breakwater.

The Village of Rondeau, Kent Co.—Has a post office, railway station, and 3 hotels—is a summer resort, and a coal receiving station for the Pere Marquette railway.

Sandwich Harbour, Ont.—on Detroit river is just below Windsor—The harbour has a front of about $1\frac{1}{2}$ miles, generally with shallow water between the edge of the channel and the shore, and a width of about 750 feet.

Wharves.—The Pittsburgh Coal Co. and Mullen Coal Co. have coaling stations here with good wharves and good depth alongside them. The rest of the wharves are old and dilapidated.

Ojibway.—At Ojibway, just south of Sandwich, the Canadian Steel Corporation have a tract of 2,500 acres and frontage of 2 miles on Detroit river with extensive plant and blast furnaces, and a slip and large docks for unloading iron ore. The slip is 2,100 feet long, with width of 400 feet on the harbour line, and 200 feet between the dock fenders, and a depth of 23 feet.

Town of Sandwich.—Is the county town of Essex Co., connected by electric road with Windsor, Walkerville, and Amherst. Population in 1921 was 4,415.

Shipping.—During the fiscal year 1921-22, 2,813 vessels, register tonnage 145,909, entered the port; 2,803 vessels, register tonnage 122,364, cleared.

Sarnia Harbour, Ont.—Lambton county, lies on the east bank of the Saint Clair river, at the head of the river, where all the waters of lake Huron enter that river. The limits of the harbour include all the waters of the St. Clair river between the Canadian shore and the international boundary in the

middle of the stream and extending from the head of the river at the outlet of lake Huron to the foot of the river at the entrance of St. Clair Flats, a distance of about thirty miles.

The first two miles below the outlet of lake Huron constitute a wide, deep and sheltered harbour of refuge. These waters include the inlet known as Sarnia bay, some 350 acres in extent and with a shore line of approximately $2\frac{1}{2}$ miles. Here vessels make their winter harbour; and, here also immense rafts of logs are handled.

The harbour is of prime importance as a harbour of refuge and for wintering quarters; it is easy of access from lake Huron. The water in the river runs very swiftly but in the bay it is slack and vessels are not exposed to any ice movement in winter. The average ice coating in winter is less than 10 inches and the shifting of boats in the winter months is easily accomplished.

Regulations.—The speed of vessels navigating the waters of St. Clair river in front of the city of Sarnia shall not exceed nine miles per hour.

Storm Signals.—Day and night signals are shown from a mast at the foot of George street, adjoining the water works property.

Lights.—On south extremity of bay point Sarnia, a pole with white shed at base, shows from a height of 16 feet above high water a white group occulting light.

At Point Edward, two red fixed range lights, shown from white square wood towers, lead to the head of St. Clair river from lake Huron.

Radiotelegraph.—There is a radiotelegraph station at Point Edward open all year; working distance 350 sea miles; call letters V.B.E.

Wharves.—Beginning at the extreme north head of the harbour line and extending to the extreme south line of the city of Sarnia dockage is available by arrangement with frontage owners.

The Grand Trunk Railway Co. wharves are at Point Edward, one 450 feet long and 40 feet wide, is used by the Steel Company of Canada for unloading cargoes of iron ore which is shipped by rail to Hamilton. There are four steam power ore-hoisting cranes installed here and these have an unloading capacity of 1,500 tons per hour.

South of the ore wharf is an open wharf 75 feet long and 50 feet wide and a shed 700 feet long by 85 feet wide, used for the transshipment and storage of flour and package freight. South again of this general freight wharf operated by the Northern Navigation Company is also a coaling wharf 110 feet long by 85 feet wide having a storage capacity of 7,000 tons and equipped with a modern coal handling plant consisting of hoisting apparatus and coal pockets for fuelling steamers. The unloading capacity is 800 tons per day and the bunkering capacity 300 tons per hour. Still further south and adjoining the Northern Navigation Coal wharf is another wharf belonging to the Grand Trunk, 1,900 feet by 150 feet.

Immediately south of the last-mentioned dock is the northerly city line of the city of Sarnia; and, starting at this point and on the east shore of Sarnia bay is the property of the Cleveland Sarnia Saw Mills Company with a double decked tramway and storage rack system for lumber extending 2,800

feet into the bay and to deep water. This tramway is 140 feet wide and terminates at the west end in a wharf 100 feet long (north to south) and 70 feet wide. The water depth at this wharf is from 8 to 14 feet. A large pool has been enclosed in the bay and the water kept warm by exhaust steam from the mills, to enable the saw mills to operate during the winter. The frontage occupied by the saw mills aggregates about 2,050 feet.

Next south of the saw mills dockage is the dock and plant of the Dominion Salt Company with a frontage of 300 feet. A deep water channel has been dredged from the north side of this property south through the bay and along the shore line to deep water in the river. This channel is 100 feet wide and approximately 2,000 feet long—15 feet deep.

Again next south comes 125 feet of frontage owned by the R. S. Gurd estate and 60 feet frontage occupied by the Cleveland Sarnia Saw Mills Company. Adjoining these two parcels is a frontage piece of 155 feet owned by W. D. Ferguson with an ice house for the storage of bay ice—15,000 square feet. South of this is an unoccupied frontage of 185 feet owned by W. A. Brown. The next 690 feet of frontage and dock is owned by Imperial Oil, Limited, and is used for winter quarters of their fleet of bulk oil carriers. A repair shop is maintained by this company for winter repairs to their boats. The next southerly 270 feet is owned by Mrs. Emily Finucane and used for winter quarters of lake carriers.

South again of the Finucane property is a wharf 80 feet long owned by the J. S. Loughhead estate and a 270 foot wharf belonging to the Reid Towing and Wrecking Company, Limited, who own and operate one of the most extensive plants of this nature on the Great Lakes. The Reid Company's wharf is 150 feet wide, with machine and repair shops 100 feet long by 40 feet used for the repair and rebuilding of hulls and machinery. The company's outfit includes several powerful tugs and lighters and a complete equipment of pontoons, hydraulic jacks, pumps, air compressors and other appliances. Adjoining this wharf on the south is a wharf owned by the city of Sarnia—length 155 feet. From this point south the dockage is all on the river St. Clair and the water depth runs from 14 to 28 feet. Although on the river, the water is practically slack for 800 feet below the Reid Company's wharf.

Immediately south of the city frontage the King Milling Company owns a wharf 200 feet by 60 feet with 2,500 square feet of sheds. Next comes the Gardiner Bros. wharf 65 feet long and with 2,600 square feet of sheds. Next south again is 200 feet of wharfage owned by the James E. Clark Estate with warehouses and coal bins aggregating 6,000 square feet. South again from this is 200 feet wharf of Mackenzie, Milne and Company. This firm handles ship chandlery and supplies of all kinds. South of this wharf is another 28 feet long belonging to Mrs. I. C. D. Dillon, 100 feet the property of the Port Huron, Sarnia Ferry Company, and 86 feet, a street end, the property of the city of Sarnia.

The next 2,767 feet of frontage south is the property of the Grand Trunk Railway, the first 1,100 foot piece carrying freight and passenger sheds 300 feet long and 25 feet in width used jointly by the Grand Trunk and Northern Navigation Company, as a passenger terminal. The balance of 1,667 feet is

used by the McGibbon Lumber Company and the Laidlaw Belton Lumber Company for dockage and lumber storage purposes.

Next south of this long Grand Trunk strip is 480 foot modern dock and warehouse used by the Imperial Oil, Limited for unloading crude petroleum and coal and for loading refined petroleum products into bulk and package freighters. The Imperial Oil dock also has a coal handling plant of 400 tons capacity per hour at this dock, and a private water works having a capacity of 37 million gallons per day.

Below the docks and plant of the Imperial Oil, Limited is the Sarnia Terminal of the Pere Marquette Railway Company, with a wharfage front of



Sarnia

713 feet; a shed and warehouse 120 by 80 feet and a car ferry slip for loading and unloading cars carried to and from their Port Huron, Michigan terminal across the river. Below the Pere Marquette docks Imperial Oil, Limited has a 400 foot frontage with a dock and wharf 150 feet long for use in loading and unloading petroleum products. South of this again is an unimproved section of 481 feet frontage belonging to the Dominion Wire Company and 417 feet improved frontage belonging to the H. Mueller Manufacturing Company with a wharf 152 by 80 feet.

The depth of water along the wharves at Sarnia averages about 21 feet except where otherwise noted. Railway tracks run alongside the wharves except in one or two short stretches, the depth of water for anchorage varies from 35 feet in the channel to 9 feet or less in the bay. Holding ground for anchorage is everywhere first class.

Repairs.—Repairs to ships including foundry equipment and boiler shops are available at Sarnia for emergency repairs or for fitting out periods in winter and spring. Complete supplies of iron, steel and brass pipe and steam fittings are always available. Cordage, ship chandlery, oils, grease, paints and similar supplies are carried in stock at Sarnia.

Communication.—Connected by a railroad tunnel under St. Clair river, and by a regular steam boat ferry with Port Huron opposite. Is an important harbour of the Grand Trunk railway and a stopping place for Canadian passenger steamers passing through the St. Clair river.

The City of Sarnia, Lambton Co., had in 1921, a population of 14,877. It had in 1920, 89 industrial establishments employing 3,239 hands, total value of products \$33,222,301.

Trade.—For the fiscal year 1921-22 the value of exports was \$21,900,183; of imports \$12,973,903.

Shipping.—During the fiscal year 1921-22, 16,003 vessels, register tonnage 2,630,286 entered the port; 16,013 vessels, register tonnage 2,683,916 cleared.

Walkerville Harbour, Ont.—On Detroit river is 1 mile east of Windsor—Off Walkerville there are depths of from 33 to 26 feet, and at the end of the Distillery dock, 24 feet.

Dock.—Walker's distillery dock is over 800 feet long, with store 50 by 40 feet, a switch track runs the whole length of dock and goods are loaded and unloaded from cars.

Town of Walkerville.—Is a flourishing manufacturing town—the site of Walker's distillery. The distillery and grain elevators are conspicuous marks. In 1920 the town had 57 industrial establishments employing 3,822 hands. Value of products \$31,818,303. Population in 1921 was 7,059. Is a station on the Grand Trunk Railway and a terminal station of the Pere Marquette road.

Shipping.—During the fiscal year 1921-22, 1,235 vessels, register tonnage 292,853, entered the port; 1,220 vessels, register tonnage 269,558, cleared.

Wallaceburg Harbour, Ont.—is situated on the Sydenham river, navigable from its mouth to a point several miles above the town. The river empties into lake St. Clair and is navigable for vessels drawing not over 19 feet of water; it has a clay or mud bottom, free from rocks or boulders, and from Wallaceburg to its mouth is not subject to any decided variations from freshets, ice jams or other causes. Vessels can be safely moored at any point, either to the various wharves or to the banks along the river.

Wharves are built parallel to the river shore and are from 10 to 30 feet in width, and as follows: Sydenham Glass Company wharf, about 600 feet long; McMairnie Bros.' wharf, about 150 feet long; Premier Electric Light Company, 50 feet long; Wallaceburg Cooperage Company, 100 feet long; public wharf at foot of Nelson street about 50 feet long. Railway sidings have been laid to the wharves of the Wallaceburg Sugar Company and the wharf of the Sydenham Glass Company; the former is equipped with a McMyler clam operated by steam for unloading coal and sugar beets. These wharves have sheds on them and in the immediate vicinity, for the storage of goods of the

two companies. The depth of water alongside these wharves is 18 feet. A slip for vessels drawing 19 feet has been dredged at the Sugar Company's plant. Vessels can be laid up here in safety at any point in the river and repairs made.

Repairs.—The repair yard of W. J. Macdonnell has a plant equipped with a marine railway on which vessels 150 feet long and 12 feet draught can be hauled out.

Town of Wallaceburg, Kent Co.—Had in 1921 a population of 4,006—is a station on Chatham, Wallaceburg and Lake Erie Electric Railway, and on Erie and Huron division of Pere Marquette road.

Northern Navigation Co., Chatham route, calls daily.

Trade.—For fiscal year 1921-22, value of imports \$1,350,800; of exports, \$21,494.

Shipping.—During the fiscal year 1921-22, 244 vessels register tonnage 56,790 entered the port, 238 vessels register tonnage 56,268 cleared.

West Dock.—A government wharf on west side of Pelee island, lake Erie, a little south of its mid length, has 12 feet of water alongside. Pelee island post office is located here.

From the shore close south of West Dock a bank with depths of 16 to 21 feet runs $3\frac{1}{4}$ miles westerly towards the Chicken islands, apart from this bank deep water is found to within $\frac{3}{8}$ of a mile along the west shore of the island.

Light.—On West Dock is a red fixed light. Hand fog horn attached.

Shipping.—During the fiscal year 1921-22, 786 vessels, register tonnage 176,602, entered the port; 782 vessels, register tonnage 176,741, cleared.

Windsor Harbour, Ont.—is at outlet of lake St. Clair—south side opposite Detroit. The harbour front is 2 miles in length lined with docks and railway transfer slips, all of which have from 3 to 4 fathoms of water alongside. About 2,000 feet below the Michigan Central car ferry wharf and 200 feet off shore, is a small boulder shoal with 15 feet least water on it.

Lights.—The Detroit river is well lighted by flashing lights and gas buoys, as well as the Detroit and Windsor city lights on either side of the river.

Docks—Wharves.—The government landing dock, 650 feet long of piling and concrete with concrete warehouse—has depth alongside of 17 feet at low water level. The Grand Trunk Railway wharf is over 600 feet long, with a railway track running the full length of the wharf, on which articles of all kinds are loaded or unloaded from cars to vessels and vice versa. The depth of water at this wharf is 25 feet, with clay bottom.

The Canadian Pacific Railway wharf is 700 feet long, with a shed 500 feet in length by 46 feet wide; two railway tracks run the full length upon which merchandise is loaded and unloaded from the cars to vessels or from vessels to cars; depth of water, 25 feet, with clay bottom.

The Michigan Central Railway wharf is 500 feet long, with a railway track running the full length of the wharf, and goods are loaded and unloaded from vessels to cars and vice versa. The wharf of J. T. Hurley & Co. is 250 feet long, upon which is erected a shed, 22 feet by 30 feet; depth of water, 19 feet, with clay bottom.

The Detroit, Belle Isle and Windsor Ferry Company's wharf, 300 feet long, and depth of water 20 feet, with clay bottom, is used by the company's ferry boats which ply every few minutes between Windsor and Detroit on the United States side of the river; it is also used as a coal wharf.

The Dominion Government landing dock is 484 feet along shore, 20 feet wide; depth of water $17\frac{1}{2}$ feet low water level.

Supplies.—All kinds of supplies and stores for vessels are obtainable at Windsor.

Repairs to vessels can be made at the wharves, but the port has no marine slip or dry dock.

City of Windsor.—Is a port of entry with Custom house and stopping place for Canadian steamers passing through Detroit river. Is a station on the Grand Trunk and C.P.R. railways, the Wabash railway, Michigan Central, Pere Marquette, Windsor, Essex and Lake Shore Electric road, Essex Terminal Railway (freight only), Ferry to Detroit.

In 1920 Windsor had 204 industrial establishments employing 3,918 hands; value of products \$28,164,856. Population in 1921 was 38,591.

Trade.—For the fiscal year 1921-22, value of exports \$26,963,540, of imports \$26,490,447.

Shipping.—During the fiscal year 1921-22, 470 vessels, register tonnage 213,041 entered the port; 453 vessels, register tonnage 235,493 cleared.

LAKE HURON, GEORGIAN BAY AND NORTH CHANNEL.

Algoma Mills, Ont.—is on the north shore of Georgian bay, district of Algoma, at the mouth of a stream emptying out of Lauzon lake close northward.

Is a site of a sawmill driven by the stream, owned by the C.P.R. Co.

Wharf.—A substantial wharf, 800 feet long, extends from the mouth of the stream to a depth of 14 feet at ordinary stage of water at its end, with a shed on it for general freight. A considerable quantity of coal is landed here for the railway.

Village of Algoma Mills, with a population of about 150, has post, telegraph and telephone offices and an hotel. A considerable quantity of lumber is shipped from it. Is a station on Sault Ste. Marie division of C.P. Railway.

Supplies.—In very limited quantities may be obtained at Algoma Mills.

Blind River, Ont.—District of Algoma, is at the mouth of the river of the same name. The approach to the wharves is through a channel 150 feet wide dredged to a depth of 15 feet at low water and marked by red and black spar buoys.

Wharves.—The government wharf, 550 feet long and 230 feet wide has depth of 18 feet at its outer end. On this wharf is a shed 100 feet by 40 feet, close westward of the Government wharf; two wharves of the Eddy Lumber Co. close together, extend in a southerly direction from the shore for $\frac{1}{4}$ of a mile.

From the mouth of the river two iron skeleton tramway piers run a little west of South for $\frac{1}{4}$ of a mile, when one runs about the same distance E.S.E. At one time vessels loaded at these piers from a lumber mill now burnt down.

Lights.—For description of lights at Blind River, see 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 304, covering chart No. 87, also Department's 1923 "List of Lights on Inland Waters."

Directions.—See 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 305, covering chart No. 87.

Port Charges.—The only port charges are at the Government wharf.

Communication.—Blind River which is a considerable lumbering centre had in 1921 a population of 1,843—has postal and telegraph communication with rest of Canada, and is a station on Sault Ste. Marie branch of Canadian Pacific Railway; steamers from Cutler to Manitoulin Island ports calls daily. Owen Sound Transportation Co's Michipicoten calls fortnightly. Dominion Transportation line between Sault Ste. Marie and Owen Sound calls twice a week.

Customs.—Blind River is an outport of entry.

Shipping.—During the fiscal year 1921-22, 155 vessels, register tonnage, 47,175 entered the port; 75 vessels, register tonnage 25,666 cleared.

Bruce Mines Harbour, Ont.—is on north side of St. Joseph channel, north channel of Lake Huron and at north end of the bay between McCort point and Jacks island to the eastward about 6 cables apart, the bay being about $\frac{1}{2}$ mile deep, with depths of from $2\frac{1}{2}$ to 1 fathom.

Dredged Channel.—A buoyed dredged channel 150 feet wide, 870 yards long with depth of 16 feet at low water, leads to outer end of Government wharf.

Anchorage.—On northeast side of McKay island, close S.E. of French island off McCort point is good anchorage in 3 fathoms.

Lights on east end of McKay island, a white, square wood tower shows a white fixed light.

On outer end of Government wharf, lantern in window of warehouse shows 12 feet above high water a red fixed light.

Wharves.—The Government wharf, 1,000 feet long runs out from about the middle of the north shore in a S.E. direction, another wharf, the property of the Bruce Mines Copper Co. is close east of it, the outer ends being 200 feet apart.

Supplies.—Ships' provisions are obtainable.

Village of Bruce Mines, Algoma district, is the site of an old disused copper mine—is a customs port of entry—has post and telegraph offices, stores, a public school and several churches.

The railway station on Sault Ste. Marie branch of C.P.R. is about 2 miles inland.

SS. *Bon Ami* of Sault Ste. Marie and Bruce Mines line calls 3 times a week. SS. *Michipicoten* of Owen Sound Transportation Co., Owen Sound to Sault Ste. Marie, calls fortnightly. Population about 700.

Shipping.—During fiscal year 1921-22, 183 vessels register tonnage 31,936 entered the port; 104 vessels register tonnage 15,794 cleared.

Byng Inlet, Ont.—is a long narrow arm of Georgian bay on its east shore which starting at Clark islands at the inlet mouth runs in a generally easterly direction, $3\frac{1}{3}$ miles to the C.P.R. coal wharf at North Byng Inlet at the mouth of the Still river, opposite South Byng Inlet, near the mouth of the Maganatanawan river. A dredged channel carries a depth of 19 feet to the C.P.R. wharf.

Wharves.—The C.P.R. coal dock at east entrance of Still river has a frontage of 500 feet with depth of 20 feet; railway tracks and 2 steel towers for unloading coal; 250 tons of coal per hour can be unloaded at each.

At South Byng Inlet are the wharves of Graves, Bigwood and Co. in connection with their saw mill, box factory and planing mill.

There are also several small lumber wharves on north side of inlet about 6 cables westward of C.P.R. coal dock.

Port Charges.—There is a harbour master and harbour master's dues are collected.

Supplies.—Ordinary ships' supplies are obtainable.

Village of Byng Inlet.—Besides the industrial plants already named, Graves, Bigwood & Co. have a large departmental store at Byng Inlet. The village

contains a post office, jail, two churches, a school house and hospital. Population about 800. The railway station of the Sudbury Toronto Branch of C.P.R. is distant about 2 miles.

Owen Sound Transportation Co's steamer *Michipicoten* Owen Sound to Sault Ste. Marie, calls fortnightly.

Shipping.—During fiscal year 1921-22, 58 vessels register tonnage 130,801 entered and cleared the port.

Cockburn Island or Tolsmaville Harbour—is a small bay on north shore of Cockburn island, south side of North channel of lake Huron about 2 miles to the westward of Channel point, NW. entrance point of Mississagi strait. Tolsmaville is on the west shore of this small bay at the SE. corner of Tolsma bay.

Anchorage.—There is anchorage in Tolsma bay, half a mile NW. of Government wharf in 7 to 8 fathoms, sand and mud.

Wharves.—There are 2 wharves, the eastern one, the private property of Mr. Tolsma, and the western one a government wharf, with 18 feet alongside at ordinary stage of water.

Village of Tolsmaville was named after a Mr. Tolsma who formerly carried on an extensive fishing trade at the place, has a custom office, and post office, and telegraph and telephone connection with Manitoulin island systems by cable across Mississagi Strait.

Dominion Transportation line, Sault Ste. Marie to Owen Sound, calls twice a week.

Steamers from Cutler to Manitoulin island ports call daily.

Shipping.—During the fiscal year 1921-22, 169 vessels, register tonnage 34,031, entered the port; 59 vessels, register tonnage 7,020, cleared.

Collingwood Harbour, Ont.—South shore of Georgian bay—is an artificial harbour formed by two piers extending from the shore. The one on the east side runs out in a NW. by N. direction for about $\frac{2}{3}$ of a mile, of which at present 1,250 feet is concrete, that on the west side of stone and cribwork runs in a general NE. direction for about $\frac{1}{2}$ a mile, and at its north end and joined to it, is a breakwater with a white octagonal wooden tower on its east extremity called the Dummy (the light having been discontinued in 1916).

The piers enclose an area of 267 acres, only about $\frac{1}{4}$ of it being of use to even moderate draught vessels. The breakwaters are $\frac{1}{4}$ of a mile apart, and vessels usually tie up to the wharves in the SE. corner of the harbour where with good lines they are safe in any gale. The dredged channel is 250 feet wide and 19 feet deep.

Buoys.—The edge of the dredged channel in 1919 was marked by 12 spar buoys, red on starboard hand, and black on port hand in entering.

Lights, etc.—On a crib situated a third of a mile southward from Breakwater tower is a white square tower, that from an elevation of 29 feet above the water exhibits a fixed red light. Hand fog horn in connection.

On the south shore of the harbour and bearing $178^{\circ} 30'$ true from the common front light, is erected a square steel skeleton tower with white square upper

part showing a fixed red light. These lights in line lead in to the curve in the dredged channel.

On a crib $304^{\circ} 30'$ true distant 510 yards from the common front range light stands a white square tower elevated 34 feet above the water, and exhibiting a fixed white light. These lights in line lead from the curve in the dredged channel to the north corner of the G.T. railway freight shed wharf.

Wharves.—On the east side of the basin are the G.T.R. elevator wharf, 1,100 feet long, depth of water 19 feet, capacity of elevator 200,000 bushels, G.T.R. lumber wharf 500 feet long and 80 feet wide, with railway sidings and switches, depth of water 16 feet, G.T.R. freight wharf 1,200 feet long with shed 200 feet by 80 feet with 15 feet water alongside.

On the south side Collingwood Shipbuilding Co.'s wharf, 2,100 feet long, town wharf 650 feet long, with freight shed 100 feet by 50 feet and 15 feet water alongside.

On the west side Collingwood Meat Co.'s wharf 800 feet long to which a channel has been dredged to a depth of 15 feet, and Charlton Lumber wharf 2,500 feet long.

Dry Docks.—At Collingwood there are two dry docks, the shorter known as No. 2, being 420 feet in length, 95 feet wide, with a depth of $14\frac{1}{2}$ feet on the sill. The other, No. 1, is 514 feet long, 59 feet wide, with $14\frac{1}{2}$ feet on sill.

Lifeboat.—The lifeboat at this port is manned by a volunteer crew.

Storm Signals.—The usual storm warnings are hoisted from a mast on the town wharf.

Shipyard.—A well-equipped yard for the construction of all kinds of vessels and machinery has been established around the dry docks.

Directions for Collingwood Harbour.—See pages 102 and 103 1919 Canadian Hydrographic Office "Sailing Directions for the Canadian Shores of Lake Huron and Georgian Bay," covering chart No. 81.

Communication.—Two branches of the G.T.R. pass through the town. The three principal steamship lines are the Northern Navigation, the Northern Michigan and the Goderich Transit.

Supplies of all kinds can be easily obtained.

Port Charges.—Harbour master's dues and wharfage on cargo.

The Town has a good system of water works, is electrically lighted and contains churches of chief religious bodies.

Population in 1921—5,882.

Trade.—For the fiscal year 1921-22, value of imports \$454,551; exports not given.

Shipping.—During the fiscal year 1921-22, 57 vessels, register tonnage 63,303, entered the port; 61 vessels, register tonnage 79,112, cleared.

Cutler Harbour, Ont.—District of Algoma, is at the NE. end of Aird bay. The harbour is about $\frac{3}{4}$ of a mile deep, its east and west entrance points, a little more than $\frac{1}{2}$ a mile apart, are Rykert point and Forwood point respectively.

Four fathoms can be carried to the extensive wharves of a large sawmill, with depths of 18 to 24 feet alongside, and there is good anchorage in the harbour in from 3 to 4 fathoms. Curran rock, awash, marked by a buoy, lies in mid entrance to Aird bay.

Range Lights.—Both red fixed. Front on outer end of wharf; back 435 feet, 19° 30' true from front.

Directions.—For entering Aird bay, see 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 292, covering chart No. 87.

Customs.—Cutler is an outport of entry.

Communication.—Postal and telegraph—and station on Sault Ste. Marie branch of the C.P.R. Steamers from Cutler to Manitoulin island ports ply daily.

Shipping.—During the fiscal year 1921-22, 195 vessels, register tonnage 41,091, entered the port; 198 vessels, register tonnage 41,872, cleared.

Depot Harbour, Ont.—On north shore of Parry island between 5 and 6 miles from Parry Sound harbour, approximate extent used by vessels one and a half mile by one-quarter mile, depth 5 fathoms over clay. The main entrance is between Cadotte point, the west point of the harbour, and Depot island, sheltering the middle portion of the harbour; the entrance is a quarter of a mile wide with least depth of 6 fathoms.

Light.—At the west end of Depot island a white square wooden tower shows from a height of 25 feet above the water a group occulting white light.

Wharves.—The elevator wharf is 1,200 feet long and 81 feet wide, situated on the north side of the harbour, owing to its length it forms a breakwater against heavy seas from the north, 550 feet of this wharf at west end is of concrete, balance of wood.

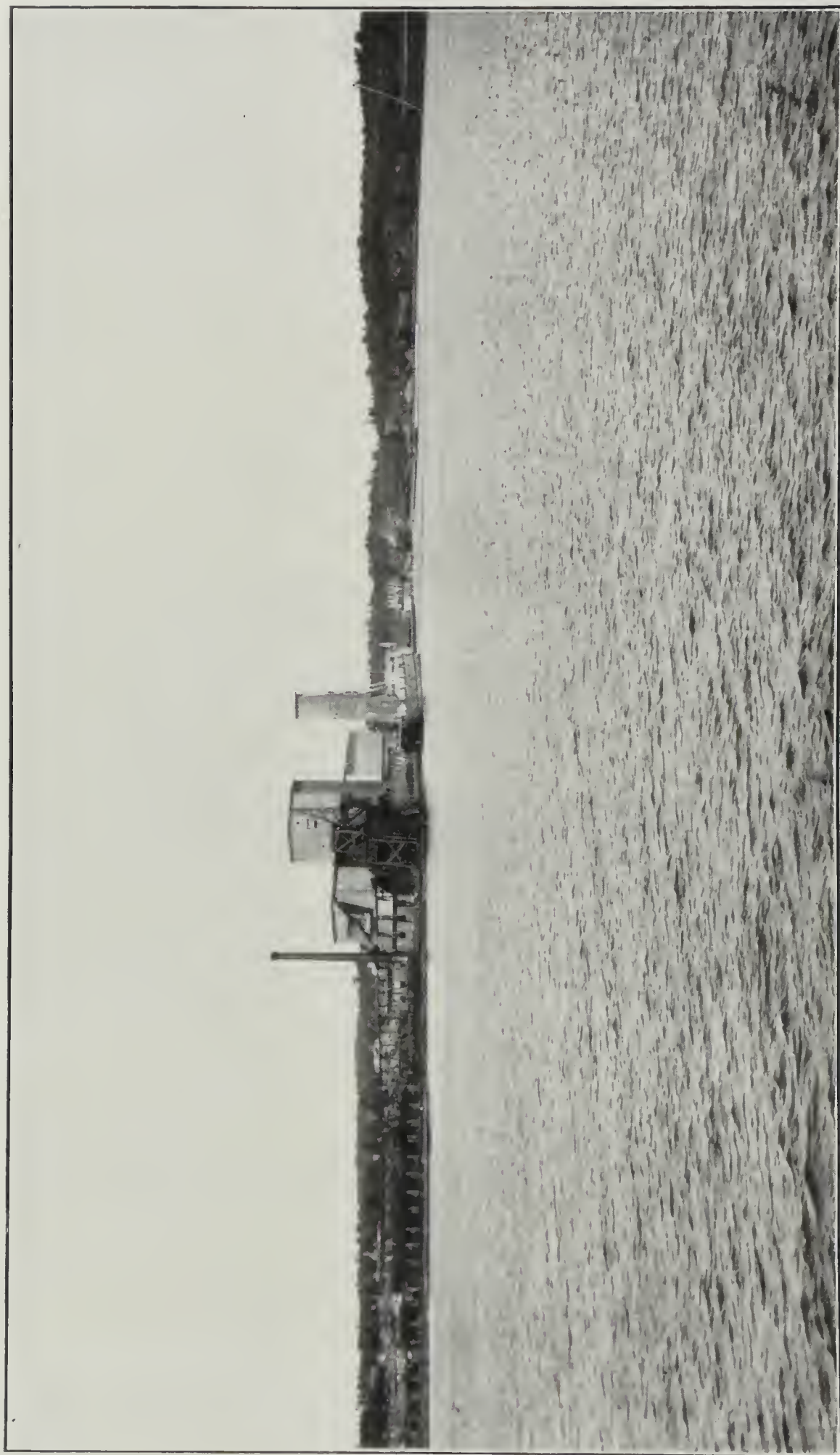
The elevator on the wharf has a capacity of 2,000,000 bushels, and two marine legs, which can discharge boats at the rate of 20,000 bushels per hour.

The amount of grain handled yearly in the harbour averages 15,000,000 bushels, principally from Chicago, and is reloaded in cars for Montreal, St. John, N.B., and Portland, Me. There is also a storage coal bin on this wharf with a capacity of about 2,500 tons, equipped with chutes which the railway company uses for coaling engines.

Six railway sidings are on wharf. Two run to elevator, two along the north side, to end of breakwater, and two on south side, one ends at power plant, the other goes on to end of breakwater.

The depth of water at this wharf is from 18 to 30 feet. The cement dock is in the centre of the harbour, of crib-work with concrete top 800 feet long and 150 feet wide, depth of water on both sides and across the face of this wharf is from 18 to 20 feet.

There are four railway sidings on the wharf used by railway company to receive carloads of steam coal from self-unloading steamers. Coal is discharged on the wharf from steamers, reloaded into dump cars by steam crane, and dumped into pile in railway yard where it is used by the company as required. From 100,000 to 150,000 tons are handled each season.



Depot Harbour, Ont.

The package freight wharf is on the south side of the harbour 1,200 feet long by 100 feet wide, depth of water alongside 21 to 35 feet. There are two freight sheds, No. 1, 600 feet long by 80 feet wide, No. 2, 650 feet by 80. Two railway sidings run alongside the sheds and the ship's side with facilities for unloading freight by steam conveyors.

Storm Signals.—The usual storm warnings are hoisted on a mast on Supply point, at the east end of the harbour.

Shipping.—During the fiscal year 1921-22, 120 vessels, register tonnage 362,955, entered the port; 119 vessels, register tonnage 357,234, cleared.

French River, Ont.—district of Parry Sound, is on NE. shore of Georgian bay, Depot island, on west side of entrance to river, is about $1\frac{3}{4}$ miles northward of the Bustard islands, a group of islands and rocks about 4 miles long and 2 miles broad; about 6 cables inside Depot island is Lefroy island with lighthouse also on west side of river.

On the east side of the river, about $1\frac{2}{3}$ miles from Lefroy island lighthouse, is a government wharf on north side of Loading cove; from the government wharf, the river, widening out, runs northerly $\frac{1}{2}$ mile to McDougall bay above which the banks rapidly converge to the falls. There is sufficient water at the government wharf and at other wharves in French river for deep draught vessels.

Anchorage.—A vessel may anchor in from 4 to 7 fathoms, mud, under the N.W. shore anywhere N.E. of Depot island.

Leading Lights.—Front—On Lefroy island, a white, square, wood, open framework tower, shows 15 feet above high water, a red fixed light.

A white, square, wood tower in mill yard on east side of river, 5,178 feet, 27° true from Lefroy island light, shows 37 feet above high water, a red fixed light. The range leads in from intersection with inner Bustard range to Lefroy island, clear of all dangers.

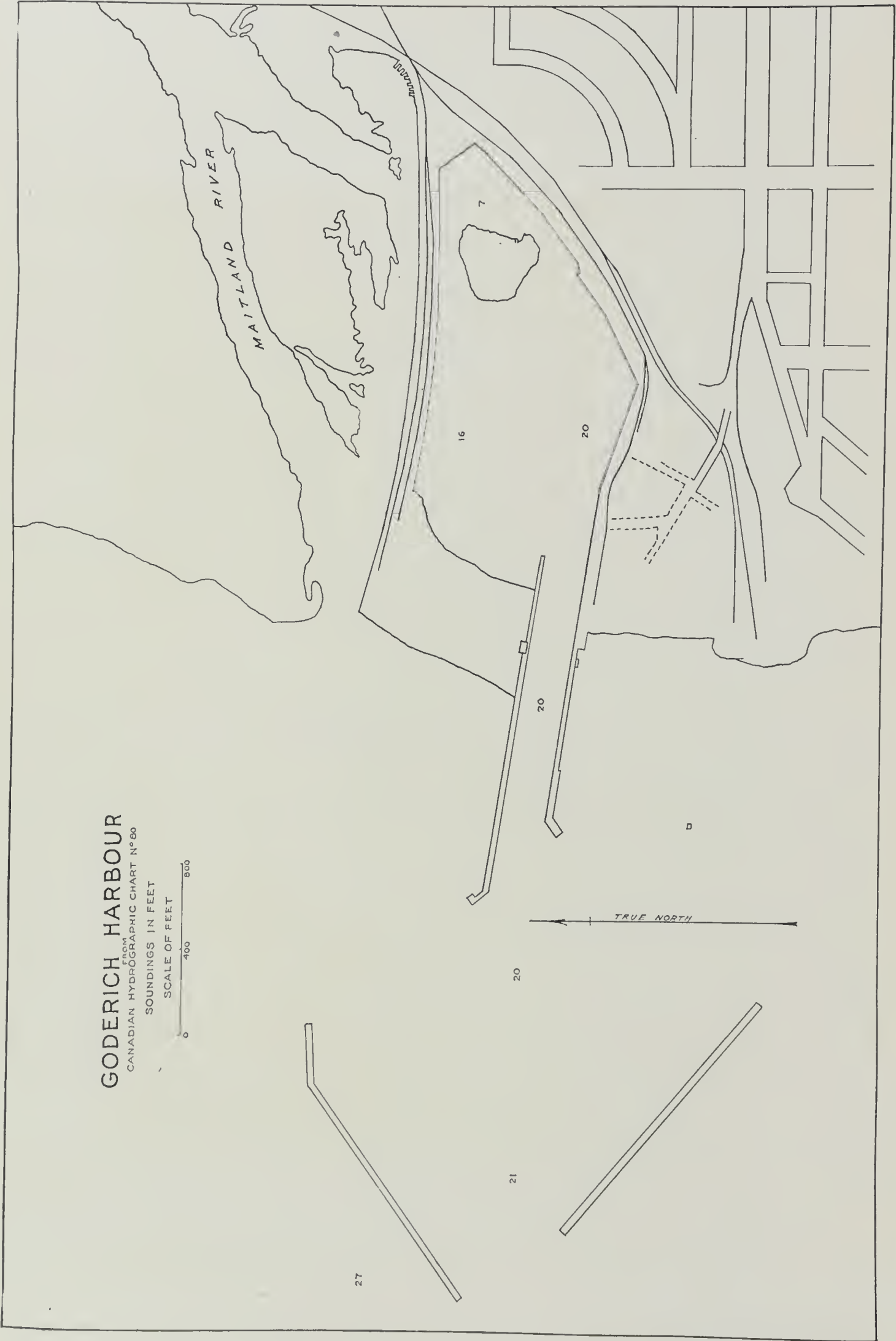
Directions for French River.—See 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 110, covering chart No. 85.

Wharves.—Besides the government wharf, there are three other wharves with warehouses, one 175 feet long, with depths alongside of from 10 to 16 feet, one 120 feet long, with depth of 18 feet and another also 120 feet long with depths alongside of from 6 to 12 feet. Lumber and pulpwood is shipped from the wharves, and large lake tugs for towing purposes are in use at the port.

Communication.—Postal and telegraph—and a station on the Sudbury section of the C.P.R. Owen Sound Transportation Company's steamer "Michipicoten" between Owen Sound and Sault Ste. Marie, calls fortnightly.

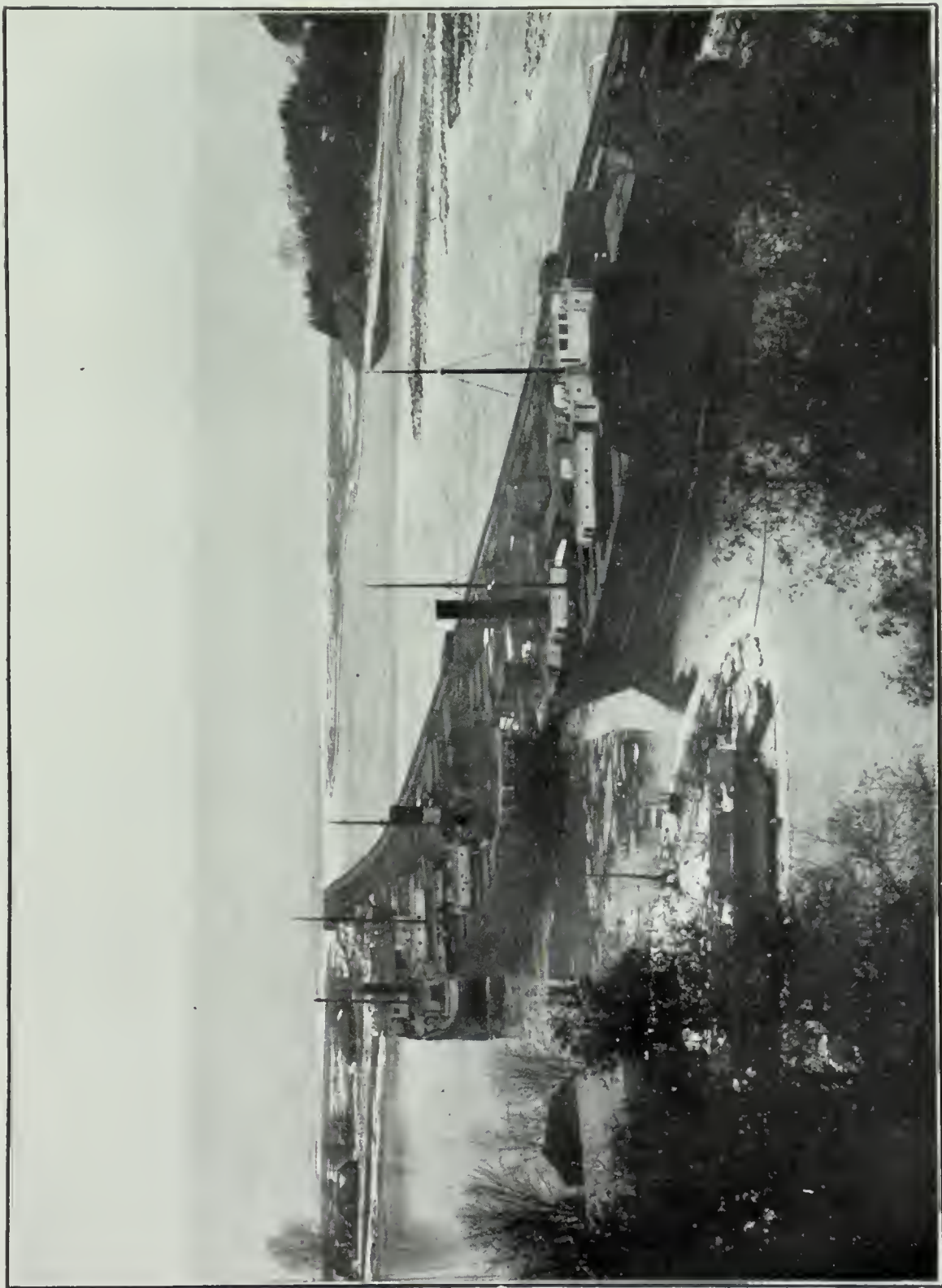
Shipping.—French river is a sub-port of Parry Sound—shipping returns not given.

Goderich, Ont.—is an artificial harbour at the mouth of the Maitland river. The entrance is between two piers, jutting out at right angles to the shore for 1,050 feet, but owing to the trend of the coast the north pier overlaps the south one by 325 feet. The piers are 200 feet apart, and each 1,600 feet long. The north pier is faced with cement. Inside the piers is a basin



surrounded by cribwork faced with timber and decked with planks with mooring hooks and posts. The dock on south side is 1,400 feet long and on the east side 650 feet, and on the north side 800 feet. Inside the basin depths of over 12 feet cover a space of about 18 acres, and 19 feet about 10 acres.

Breakwaters.—The S.W. end of the north breakwater lies in the direction of the entrance piers, one-third of a mile away. The breakwater is about 500



Goderich, Ont., Breakwater.

yards long in an E.N.E. direction and it is proposed to continue it to the mouth of the Maitland river.

A second known as the south breakwater has been built 400 yards SW. of the entrance between the piers. The distance between the breakwaters at their outer ends is about 600 feet.

Depths.—A depth of not less than 19 feet at standard low water can be carried into Goderich harbour to the Commercial wharf and elevators at the

south end of the basin and also to the south side of the breakwater separating Maitland river from the harbour.

Buoys.—The dredged channel off the entrance to the harbour is marked by four black and three red spar buoys.

Directions.—To enter the harbour the breakwater light should be given a berth of 250 feet and the range lights brought on bearing $89^{\circ} 45'$ until 200 yards off the front light, when alter course to pass midway between the piers.

Lights on high bank, S. of entrance to harbour, a white, square, stone building, red octagonal, iron lantern, shows from a height of 150 feet above high water, a white fixed group flashing light. On the southwest end of the north breakwater is a white square beacon which from a height of 25 feet above the water, shows a white occulting light.

At 117 feet from the outer end of the north pier is erected a red square open frame work with white enclosed upper part which, from a height of 41 feet above the water, exhibits a fixed red light.

On the beach 1,430 feet $89^{\circ} 30'$ from the front light, is a square steel skeleton tower with white wooden enclosed upper part, that from a height of 65 feet above the water exhibits a fixed red light.

Electric Lamps.—Ten incandescent electric lamps on poles equally spaced, are established on the south pier. They are conspicuous at sea and plainly mark the direction of the pier.

Life Boat.—A life boat manned by a volunteer crew, is kept in a boat house on the south entrance pier.

Storm Signals.—The usual Canadian storm signals are displayed from a mast standing near the main lighthouse.

Elevators.—On the south side of the harbour are two grain elevators, one with a capacity of 1,000,000 bushels owned by the Goderich Elevator and Transit Co., the other, capacity 800,000 bushels owned by the Western Canada Flour Mills Co.

Communication.—Goderich is the terminus of the Buffalo and Lake Huron division of the Grand Trunk Railway, and also of a branch of the Canadian Pacific Railway. Three regular lines of steamboats connect Goderich with other lake ports, and it is a winter port for grain carrying steamers.

Supplies and Repairs.—All the usual supplies can be obtained, and extensive repairs made to machinery.

The Town has a court house, water works, electric light, telephone, telegraph and express offices; had in 1921 a population of 4,107. In 1920 Goderich had 47 industrial establishments employing 417 hands, value of products \$7,264,367.

Trade.—For the fiscal year 1921-22, value of imports \$1,276,054, exports not given.

Shipping.—In the fiscal year 1921-22, 116 vessels, register tonnage 227,169 entered the port; 151 vessels, register tonnage 216,956 cleared.

Gore Bay Harbour, Ont.—North shore of Manitoulin island, is at the head of Gore bay which runs south $2\frac{1}{4}$ miles between its entrance points,

Gorrel point and Janet head to the westward, $1\frac{1}{4}$ miles apart. The bay gradually narrows to the bottom and affords good anchorage in from 4 to 10 fathoms, mud, the former depth being found at $\frac{1}{4}$ of a mile inside Town point on west shore of bay, and about the same distance from the head of the bay.

Light on Janet head, a white, square, wood tower, dwelling attached, shows 43 feet above high water, a white fixed light. Hand fog horn attached.

Wharves.—There are 4 wharves in Gore Bay harbour, the southernmost and largest known as the Merchants' wharf—has 15 feet depth alongside. The public wharf has a depth of 14 feet alongside, and the other two known as Farmers and Fish wharves 12 feet.

Supplies.—Meat and other ships' provisions can be obtained here.

Gore Bay Village, District of Algoma, is the county seat of Manitoulin island—has post and telegraph and telephone offices—nearest railway station is at Little Current, Manitoulin island.

Owen Sound Transportation Co's steamer *Michipicoten* calls fortnightly. Dominion Transportation line, Sault Ste. Marie to Owen Sound, calls twice a week; steamers from Cutler to Manitoulin island, daily. Population about 700.

Customs.—Gore Bay is an outport of entry.

Shipping.—During fiscal year 1921-22, 423 vessels, register tonnage 95,265 entered the port; 292 vessels register tonnage 52,543 cleared.

Key Harbour, Ont.—Parry Sound district—NE. shore of Georgian bay, is about midway between mouths of French river and Byng inlet.

The approach channel to Key harbour, with a depth of 22 feet at ordinary stage of water, lies north of three groups of islets known as Murray rocks, Keefer island, Bigsby island and Mann island; and southward of Dead, Dokis, Wedge, Germain and Pine islands.

Buoys—Beacons.—For description of buoys and beacons in Key harbour and approaches, and further hydrographic information, see 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, pages 114 to 116 inclusive, covering chart No. 85.

Directions for Key Harbour.—See 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 117, covering chart No. 85.

Wharves.—A wharf for loading of iron ore and unloading of coal and other materials, extends from north entrance point of Key inlet 1,100 feet in a westerly direction, depth alongside 22 feet at ordinary stage of water; the wharf has a spur line to main line of Canadian National Railway at Key junction. Iron ore is conveyed to a building on the wharf.

Another wharf, with 24 feet water alongside, has elevator and pockets for storage of iron ore carried by spouts to steamers loading.

Communication.—Postal and telegraph—and station on Key harbour branch of Canadian National Railways.

Shipping.—During the fiscal year 1921-22, 54 vessels register tonnage 67,158 entered and cleared the port.

Killarney Harbour, Ont.—is on north shore of North channel of lake Huron near its junction with Georgian bay—the harbour is in the narrow strait between George island and the mainland NE., it affords excellent shelter from all winds, the depth in the channel is 17 feet at ordinary stage of water.

The north shore of the harbour is indented by 3 coves from west to east, Cameron, Thebo, and one close west of east lighthouse.

Jackman rock with 8 feet least water on it, lies in the east entrance to Killarney harbour.

Lights.—Killarney East—On Red Rock point, 1 mile east of Killarney, a white, square, wood tower shows 54 feet above high water, a white fixed light. Hand fog horn attached.

Killarney West—On Partridge island, 1 mile NW. of Killarney, a white, square, wood tower shows 37 feet above high water a white fixed light.

Directions from SE.—See 1919 Canadian Sailing Directions for Canadian shores of Lake Huron and Georgian Bay, page 238, covering chart No. 86. From SW., page 87, covering chart No. 86.

Wharves.—There are a few small wharves on north side of Killarney harbour.

Supplies in small quantities can be obtained.

Village of Killarney, District of Algoma, is on north shore of harbour, near its western end; is a fishing village, with post office, Roman Catholic church, small hotel, and store. Population about 200. Owen Sound Transportation Co's steamer "Michipicoten" calls fortnightly. Dominion Transportation line, Sault Ste. Marie to Owen Sound calls twice a week.

Kincardine Harbour, Ont.—is on east side of lake Huron, at mouth of Penetangore river, close southward of Horton point. Is a small artificial harbour formed by dredging a small basin of about 3 acres at mouth of river and building 2 piers in a NW. direction at right angles to beach and 125 feet apart. The north pier is 650 feet long, the south pier somewhat shorter and its outer 50 feet turns southward making an entrance width between the outer ends of the two piers of 185 feet. The major portion of the harbour is dredged to a depth of 14 feet.

The docks in the basin accommodate vessels drawing from 11 to 14 feet.

Range Lights.—Front; on north pier, a brown, square steel skeleton tower shows 35 feet above high water, a red fixed light.

Back; in town on hill, a white, octagonal wood tower, dwelling attached, shows 80 feet above high water a white flashing light.

Storm Signals are shown from wharf on east side of harbour.

Lifeboat.—A life boat is maintained at Kincardine.

Repairs.—Slight machinery repairs to vessels can be made at Kincardine.

Supplies.—Ships' supplies in good quantities are obtainable.

Town of Kincardine, Bruce Co., at the mouth of Penetangore river—is a terminus of the Kincardine branch of Middle division of Grand Trunk Railway—has salt works, telephone, telegraph, and express offices, and some conspicuous churches. Population in 1921 was 2,077.

Shipping.—During the fiscal year 1921-22, 5 vessels register tonnage 499 entered and cleared the port.

Lionhead Harbour, Ont.—is on west shore of Georgian bay, about 15 miles northward of Wiarton, as the crow flies.

The harbour is about $\frac{1}{4}$ of a mile square with depths of from 8 to 11 feet. A government wharf and breakwater extends from the NW. point of the harbour SE. by E. 150 feet, and then E. by N. 215 feet, on the south side of the outer part is a depth of 15 feet.

Light.—Near outer end of breakwater, a white, square, wood tower shows 27 feet above high water a white fixed light.

Village of Lionhead, Bruce Co., on south shore of harbour; has saw, shingle planing and flour mills—post and telegraph offices—and Episcopal and Presbyterian churches—has road connection with Wiarton at which is the nearest railway station.

Little Current Harbour, Ont.—District of Algoma is on north shore of Manitoulin island and comprises the narrow channel between the main of Manitoulin island and Goat island, the latter being about $10\frac{1}{2}$ cables long east and west.

Between Magazine point (SW. extreme of Goat island) and the town is a rocky bar, 300 yards broad, through which a channel has been excavated to a depth of 31 feet. The channel is buoyed.

From the NW. point of Picnic island, a little more than a mile NW. of Magazine point, to beyond the north point of Low island, half a mile to the SE., there is a dredged channel of about $\frac{3}{4}$ of a mile in length with depth of 21 feet. This channel is also buoyed. Spider island at the north end of the town is separated from Low island by a passage about $\frac{3}{4}$ of a cable in width.

About 1 cable southward of Magazine point, and 120 yards off the town front, is a small lump called Eleven foot rock with that depth on it. A black spar buoy marks the rock.

Bridge.—From Shut-in point on mainland of Manitoulin island about opposite the middle of Goat island, a swing bridge crosses to the latter. The swing when open leaves two passages each 150 feet wide on each side of the swing, the NE. passage is for vessels bound NW., the other for those bound SE. At night, a green light on swing pier and white light on each side of passage mean bridge open. Red light on swing pier, bridge closed.

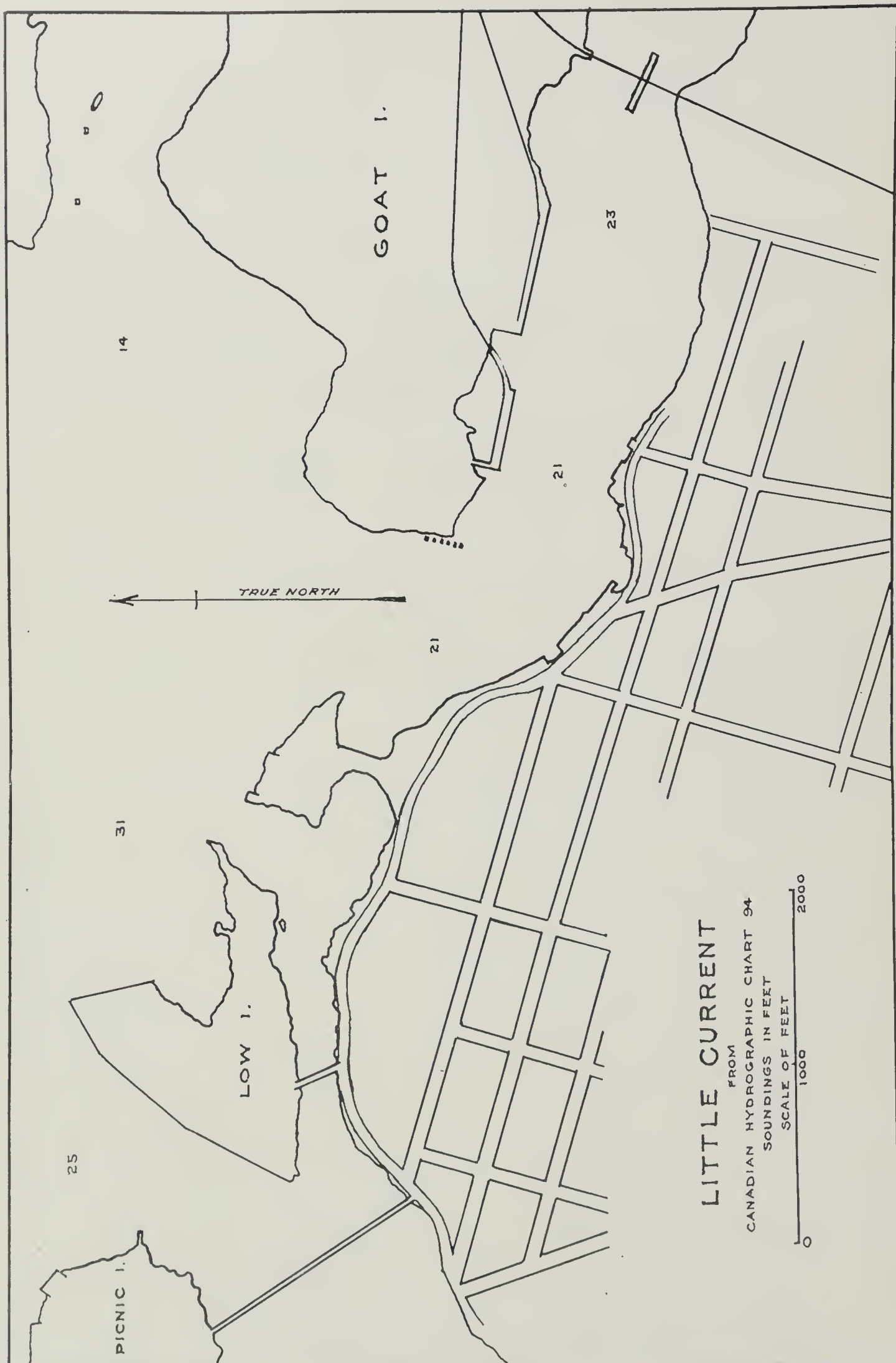
Current.—The current from which the town and passage acquire the name, runs very strongly at times in either direction.

Boom.—A boom between several cribs is moored off Magazine point to keep towed logs from grounding.

Lights.—On east extreme of Spider island, a white, square, wood tower shows 40 feet above high water, a white fixed light.

Range Lights.—Front—near shore in village, a pole shows 33 feet above high water, a red fixed light.

Back—On high ground 372 feet, 174° true from front, a mast shows 58 feet above high water a red fixed light.



Wharves.—Turner's wharf, near front range light, is 250 feet long, with 20 feet alongside. On Goat island, close eastward of Magazine point, is the Commercial dock of the Algoma Eastern Railway, with about 150 yards frontage, railway siding, and depth of 21 feet alongside. Between this wharf and the swing bridge, is the coal dock of the railway, with coal hoist and siding, about 210 yards frontage and depth alongside of 21 feet.

Coal.—A considerable quantity of coal is landed on Goat island.

Supplies.—Ships' supplies are obtainable.

Town of Little Current.—Is built along the shore of Manitoulin island between Shutin point and Old Fort bridge, connecting Picnic island with the main—has telegraphic connection with Canadian system, and telephone connection on the island—is a customs port of entry. In the town and on islands off it are sawmills. Owen Sound Transportation Co.'s steamer *Michipicoten* calls fortnightly. Dominion Transportation Line, Saulte Ste. Marie and Owen Sound, calls twice a week. Steamer from Cutler to Manitoulin island calls daily. The town has a considerable trade in lumber. Population about 1,200.

Shipping.—During the fiscal year 1921-22, 205 vessels register tonnage 89,701, entered the port; 61 vessels, register tonnage, 41,202, cleared.

Meaford Harbour, Ont.—is on the south shore of Georgian bay, at the mouth of Bighead river—between 7 and 8 miles south of cape Rich.

Is an artificial harbour protected on its east and north sides by a stone filled crib breakwater, built out from the shore N. $\frac{1}{2}$ E. (mag.) $\frac{1}{4}$ of a mile, thence under name of North breakwater stone filled cribwork, concrete capped, W. $\frac{5}{8}$ S. (mag.) 500 feet. From the west it is sheltered by the old wharf which runs N. by E. $\frac{3}{4}$ E. (mag.) 500 feet out from the shore.

The steel bridge on Trowbridge street of the town forms the southern limit of the harbour for vessels other than pleasure craft.

The harbour basin on either side is piled, the west side piling being concrete capped with mooring facilities for larger vessels. The entrance is 250 feet wide with depth of 23 feet. Inside the harbour has been dredged to a depth of 21 feet, over an area of about 9 acres, accommodating the largest grain carriers.

Light.—On west end of breakwater on north side of entrance, a black square, steel, skeleton tower shows from a height of 20 feet above high water, a white occulting light.

Wharves.—The landing wharf for passengers and package freight is on the west side of the harbour.

The wharf for lumber, coal, etc., is on the east side where the G.T.R. branch line terminates.

Supplies.—Steam coal can be obtained on the east side; other supplies are such as are afforded by ordinary stores of a country town.

Communication.—Postal and telegraph. Is the terminus of the Meaford branch, of northern division of G.T.R. Two freight and passenger lines plying to Georgian bay ports and Sault Ste. Marie visit the port.

The Town of Meaford, Grey Co.—There is an excellent and well settled farming district about Meaford and the town has several churches and stores, and the usual facilities of a country town. Population in 1921, 2,650

Shipping.—During the fiscal year 1921-22, 40 vessels, register tonnage 10,857, entered and cleared.

Midland Harbour, Ont.—The entrance points to Midland bay harbour are Midland point on the north and Elimere point on the south, about $1\frac{1}{2}$ miles apart.

From the middle of the line between these points the harbour runs in a SW. direction for a distance of about $1\frac{5}{6}$ miles to the town of Midland at the bottom of the bay.

With the exception of Midland bay shoal there is good anchorage in the bay in from 4 to 7 fathoms, mud. Many vessels winter in the harbour.

Midland Bay Shoal.—With 11 feet least water on it lies $1\frac{1}{10}$ miles SW. from Midland point almost in the track of vessels bound to Midland, a rock with 17 feet water on it lies 350 yards westward from Midland bay shoal.

Buoy.—A red spar buoy marks Midland bay shoal.

Range Lights.—Front: close to the water 2,500 feet northward of Midland point, a white square, wood tower from a height of 49 feet above high water shows a white fixed light.

Back—405 feet, 283° (W. by N. $\frac{3}{4}$ N. Mag.), from the front light, a similar tower shows from a height of 85 feet above high water, a similar light.

These lights in line lead from the Elimere point range to the Victoria harbour range for a distance of $2\frac{1}{2}$ miles.

Range Lights.—Front: On the hillside in SW. part of the town, a mast shows from a height of 150 feet above high water a red fixed electric light.

A similar mast light, 190 feet above high water, is $1,320$ feet 230° from the front light.

Directions.—See Canadian Hydrographic Office 1919 "Sailing Directions for the Canadian Shores of lake Huron and Georgian Bay," page 216, covering chart No. 83.

Elevators, Wharves, etc.—A large cement storage addition has been added to the Midland Grain Elevator which now has a capacity of 3,000,000 bushels, a railway siding runs to the elevator, depth alongside 22 feet.

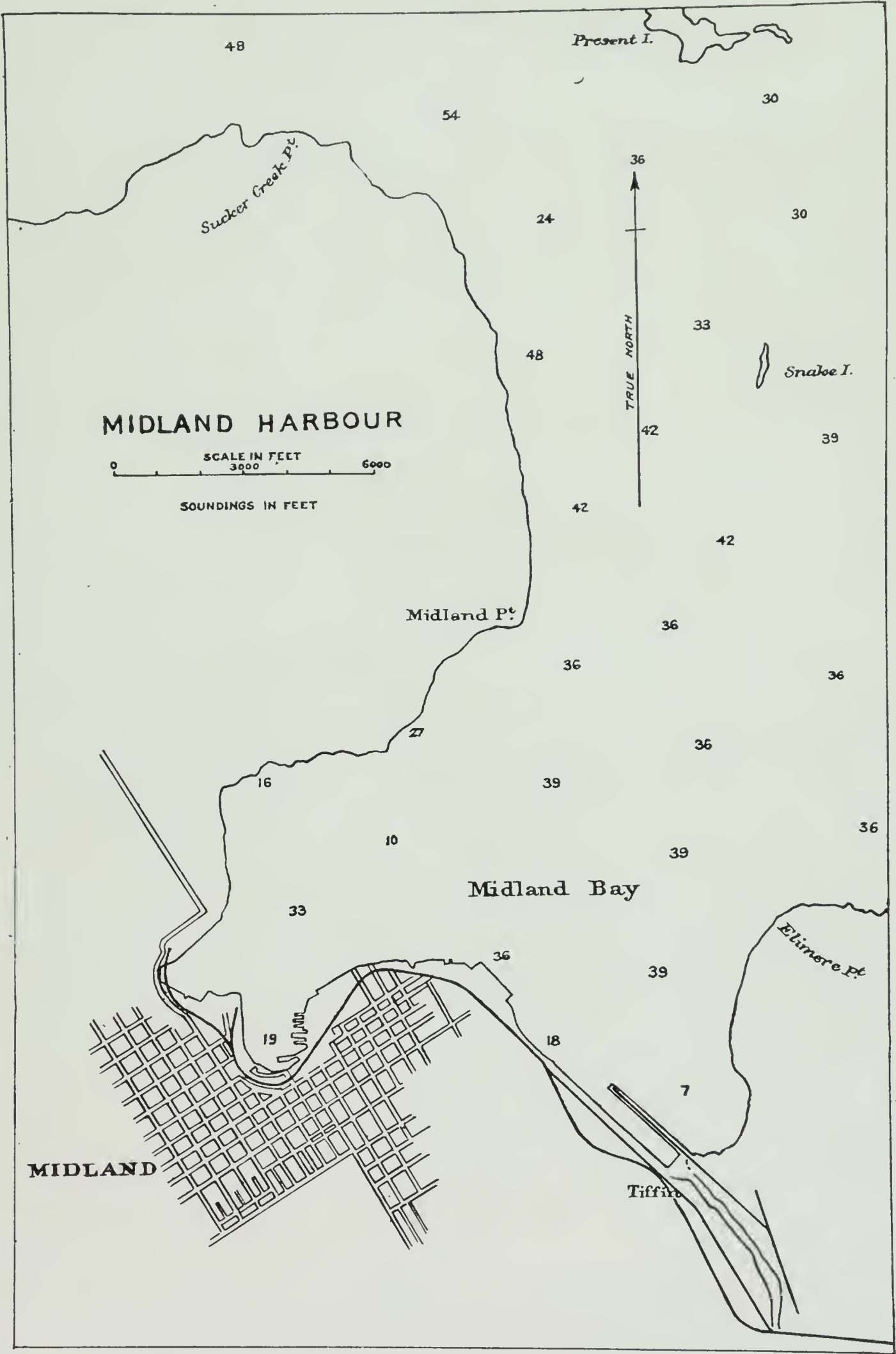
Aberdeen elevator near Dollarville, a suburb of Midland, has a capacity of 1,000,000 bushels, with facilities for unloading vessels at the rate of 10,000 bushels an hour, has a siding where cars can be loaded, water alongside 25 feet.

Manly Chew's Mill has a capacity of 18,000,000 to 20,000,000 feet of lumber per season, with large dock frontage water alongside 15 to 20 feet.

Letherby and Chew Mill has a capacity of 18,000,000 to 20,000,000 feet of lumber per season, with dock frontage, water alongside 22 feet.

The Midland Coal Dock Co. occupy the site of the old St. Lawrence Playfair mill. Docks are 900 feet long with 20 feet water alongside. The company can handle 300,000 tons of coal, and have storage space for 75,000 tons; the plant is equipped with modern unloading machinery, which works at the rate of 250 tons an hour. There is a railway siding to the dock, and the largest lake vessels can coal there.

Midland Wood Works, Ltd. factory makes boxes, doors, sashes, and all kinds of house building material, water along frontage from 16 to 18 feet.



Midland Wood Products, Ltd., have a two-storey brick building 240 feet and 75 feet, with dry kilns, for manufacturing doors, sashes, hardwood floors, etc., employ 150 men.

Copeland Flour Mills, Ltd., adjoins the Midland elevator, has a capacity of 3,000 barrels a day, in addition to the flour mill is a large feed plant, for the manufacture of all commercial feeds. Accommodation for shipping by rail or water.

Government Dock has a good frontage, with 14 to 22 feet alongside.

Grand Trunk Railway Dock.—This dock has 2 railway sidings, and a large shed 150 feet by 36 feet, water alongside 22 feet.

Midland Towing and Wrecking Co.'s Dock has wrecking sheds and appliances, and about 22 feet water alongside.

Canadian Corporation Co.'s iron ore smelter on the NW. side of the inner harbour is a conspicuous object—a solidly built wharf, with from 14 to 22 feet water, and railway siding along it fronts the smelter and the engine works near it.

Repairs—*Midland Engine Works, Machine Shop, and Foundry* have facilities for handling any repair work to engines and auxiliary plant of any of the lake merchant marine—iron and brass foundries, blacksmith shop and steam pipe fittings, and boat supplies. Also handle gasoline and coal in bulk.

Shipbuilding.—The *Midland Shipbuilding Co., Ltd.*, occupy the old site of *James Playfair & Co.'s* lumber mill. They have launching docks of over 800 feet, and other facilities for building the largest type of ships on the Great Lakes. They employ from 350 to 400 men. All kinds of repair work done.

Coal—Supplies—Oil—can be purchased at reasonable prices.

Storm Signals are displayed at Midland.

Wireless Station—Midland has a wireless station. Call letters V.V.C.; range 350 sea miles.

Customs.—Midland is a port of entry.

Communication.—Midland is a terminal of the Grand Trunk railway. During the navigation season has daily steamship connection with Parry Sound and Penetanguishene by a steamer of the *Canada Steamship Co.*, and occasional connection by boats of 3 other companies with Georgian bay and North channel of lake Huron ports.

The Town, Simcoe Co., built on the SW. shore of Midland bay has a number of industries already described, also churches of most denominations—public schools, library, and three chartered banks. It is a large grain port. Population in 1921: 7,016.

Trade.—For the fiscal year 1921-22 the value of the imports was \$1,282,137; of the exports \$44,156.

Shipping.—During the fiscal year 1921-22, 285 vessels, register tonnage 701,850 entered the port; 277 vessels, register tonnage 682,492 cleared.

Owen Sound Harbour, Ont.—is at the bottom of Owen Sound bay, south shore of Georgian bay. The entrance points of the bay, cape Commodore, the NW. one, and Vails point, the SE. one, are about 9 (8 naut.) miles apart.

Between these points the bay runs in a SE. direction to the harbour and town of Owen Sound at the head. The bay affords a well sheltered approach to the town in westerly gales and the shores can everywhere be approached to $\frac{1}{4}$ of a mile except off Vails point and Squaw point on the same side, the latter about 3 miles from the entrance.

The harbour of Owen Sound is an artificial one and the entrance is approached through a dredged channel, over half a mile long, 200 feet wide, with a depth of 19 feet, the depth in the harbour being the same.

Anchorage.—There is good anchorage off Brooke on west side of the sound about $\frac{3}{4}$ of a mile northward of the harbour entrance in 6 to 7 fathoms, mud.

Range Lights.—On east side of entrance at mouth of Sydenham river, are two square, steel, skeleton towers, 1,060 feet apart, with upper portions painted white with black stripes on north faces, and showing white fixed lights. The front light is 50 feet, and the back 92 feet above high water. The lights in line lead through the dredged cut.

Buoys.—Two black and three red spar buoys mark the SE. and NW. sides respectively of the dredged channel to the harbour.

Directions for Entering Owen Sound Harbour.—Before reaching Squaw point, the range lights should be brought in line 195° (S. by W. $7/8$ W. Mag.) and so kept until nearly abreast of the embankment wall on N.W. side of dredged channel when a vessel should leave the range and steer into the harbour midway between the wharves.

Drydock.—On west side of harbour, can only accommodate tugs.

Wharves—Industries.—The wharves in the harbour on the east side are: No. 1, town dock, 450 feet long by 20 feet wide; No. 2, owned by Davis Smith Malone Co., Ltd., 200 feet by 20 feet; No. 3, Dominion Transportation Co., Ltd., 200 feet by 20 feet; No. 4, owned by the Canadian Pacific Railway Company, 1,900 feet long by 70 feet; No. 5, Canadian Pacific Railway Company's slip, 1,200 feet by 70 feet; No. 6, Keenan Bros.' wharf, leased from the Canadian Pacific Railway Company, 400 feet by 30; No. 7, McQuay Tanning Company, 100 feet long by 20 feet; No. 8, Maitland & Rixon, 200 feet by 30 feet; No. 9, Imperial Cement Company's slip, 600 feet long by 40 feet; No. 10, Carney Lumber Company, 1,000 feet by 40; No. 11, Keenan Bros. Sawmill wharf, 100 feet by 30. Wharves on the west side: No. 1, town dock, 625 feet by 30; No. 2, J. K. McLauchlan, 383 feet by 30; No. 3, Grand Trunk Railway wharf, 1,000 feet by 30; No. 4, N. A. Bent Chair Company, 316 feet by 30; No. 5, John Harrison & Sons, 400 feet by 30; No. 6, Sun Cement Company, 235 feet by 30; No. 7, Owen Sound Cement Company, 290 feet by 30 feet; No. 8, John Harrison & Co., 800 feet by 30. The depth of water along the wharves is 22 feet. The depth in the river along the docks is not more than 18 feet, should be 25 feet when dredged. A revetment wall on both sides of the harbour has been built.

Sheds.—The freight sheds are, the Canadian Pacific Railway cattle sheds, 50 feet by 30 feet; Canadian Pacific Railway freight sheds, one 350 feet by 40 feet; one 300 feet by 60 feet. The Grand Trunk sheds are, cattle shed 75 feet long by 50 feet, and a freight shed 300 feet by 60 feet wide.

Railway tracks run on both sides of the river adjacent to the sheds, and freight is moved to and from vessels directly into the cars by hand trucks.

Storm Signals are made from a mast on the west side of the southern part of the harbour.

Repairs.—Extensive machinery repairs can be carried out.

Supplies of all sorts are obtainable.

Communication.—Is a terminus of Owen Sound section of C.P.R. and of the Harristown-Owen Sound branch of the Grand Trunk Railway, eastern division.

Canadian Pacific Steamship line between Port McNicoll and Fort William calls three times a week.

Owen Sound Transportation Co.'s SS. *Michipicoten*, Owen Sound, Collingwood and Sault Ste. Marie fortnightly.

Dominion Transportation line—Sault Ste. Marie and Owen Sound 2 trips a week.

The City of Owen Sound, Grey Co., is built on both banks of the Sydenham river entering the head of the harbour—is the county town of Grey. The station and yards of the C.P.R. are on the east side of the harbour; of the G.T.R. on the west side. Has good system of waterworks and electric lighting. Population in 1921, 12,190. In 1920 had 101 industrial establishments employing 1,875 hands, value of products, \$6,149,898.

Trade.—For the fiscal year 1921-22, value of imports was \$652,458; value of exports not given.

Shipping.—During the fiscal year 1921-22, 274 vessels, register tonnage 155,403, entered the port; 230 vessels, register tonnage 70,509, cleared.

Parry Sound Harbour, Ont.—on east shore of Georgian bay—has for entrance points Deepwater on the S.W. and Bobs' point to the eastward, 250 yards apart. For heavy draught vessels the navigable channel between these points is 125 yards wide owing to the flat off Bobs' point.

The harbour is comprised between the entrance points and the Indian village on Parry island about $1\frac{1}{4}$ miles S.W. and the swing bridge at Rose point on the east mainland about $\frac{3}{4}$ of a mile S.E. of the village, with Salt point about midway between them.

The northern portion of the harbour at the mouth of Seguin river is the shoalest part, elsewhere the depths in the harbour range from 4 to 15 fathoms. The islands in the harbour are, in the northern portion Oak and Rosetta close south of Oak, both near the western shore; in the southern portion Sloop about $\frac{1}{2}$ mile N. by E. from Rose point and close N.W. of Jenkins point on the east shore, and Buffalo island close northward of Rose point.

A rock with 10 feet water on it lies S.E. of Bobs' point 200 yards off the eastern shore of harbour. A red spar buoy marks it.

Another rock with 6 feet on it lies 250 yards eastward from N.E. end of Salt point.

Rose Point Swing Bridge.—On this long narrow point, the extreme S.E. limit of the harbour, the Grand Trunk Railway swing bridge crosses to Parry island, and thence the railway runs to Depot harbour. The swing pier is 275

feet from Rose point and 450 feet from Parry island, on each side of the pier is a passage 60 feet wide.

Bridge Signals.—In day time a mast on the centre of the pier shows 70 feet above the water a red and white ball 4 feet in diameter when channel is clear; ball down, navigation closed. At night, a green light is shown from the centre pier when openings are clear, a red light when navigation is closed.

Directions.—See 1919 Canadian "Sailing Directions for Canadian Shores on Lake Huron and Georgian Bay," page 151, covering chart No. 84.

Wharves.—Parry Sound wharf is 901 feet in length and 30 feet in width, depth of water starting 50 feet from the shore line and running to the southern extremity, is from 15 to 18 feet and 17 feet across the end. Adjoining the wharf are two storehouses, one belonging to the Parry Sound Lumber Co. measures 64 by 26 feet, and the other to the William Beatty Co. is 86 by 38 feet. The wharf is also fitted with coal bins which hold from 2,500 to 3,000 tons.

The Canadian Northern Ontario Railway wharf measures 465 feet in length by 75 feet in width, and has a depth of water, from 18 to 23 feet along both sides. There is a freight shed on the wharf, 100 by 30 feet, and a railway siding which runs to the extremity of the dock. Freight is loaded and unloaded from the cars. The Parry Sound shore wharf is a crib wharf, running along the shore for about 83 feet, with a depth of water of about 11 feet; a storehouse, partly on the wharf, measures 103 by 24 feet.

Rose point wharf is used for passengers from the Grand Trunk; it measures 73 by 20 feet; depth of water 18 to 20 feet along the front. The Department of Marine and Fisheries has a buoy depot at this harbour with a wharf for landing buoys.

A new Government wharf consisting of pile substructure and concrete superstructure, is 300 feet long by 26 feet wide. The approach is 115 feet wide by 220 feet long. A channel has been dredged alongside this wharf to a depth of 18 feet below low water mark.

Thompson's wharf is built off the large hotel on SW. side of point just east of Buffalo island.

Water—Supplies.—Ships' supplies of all sorts and water are easily obtainable.

Communication.—Postal, telegraph, and telephone station on Muskoka line of Ontario division of Canadian National Railways; on Sudbury section of Canadian Pacific Railway, and on Madawaska and Depot harbour branch of Ottawa division of the Grand Trunk Railway.

SS. Midland City Georgian Bay Tourist Co. of Midland from Midland to Thirty Thousands Islands ports calls daily.

Owen Sound Transportation Co's steamer *Michipicoten* calls fortnightly.

Town of Parry Sound, District of Parry Sound, is built on north and south sides of the mouth of Seguin river. Has 2 saw mills operated by Conger and the Peter Estate. Is the headquarters for the Great Lakes of the Marine and Fisheries Department. Is chief customs port for the NE. shore of Georgian Bay. The Canadian Explosives Co. Ltd. have a large plant 5 miles NW. of the town.—Has branches of the banks of Nova Scotia, Commerce and Toronto;

several hotels including the Belvidère north of Bobs point and the one at Thompsons point.

The Standard Chemical Works and Smelter are at the north end of the town which has stores of all kinds, churches of all denominations, and an excellent water supply. Population in 1921 was 3,546.

Trade.—For the fiscal year 1921-22, value of imports \$2,150,916; of exports \$25,993.

Shipping.—During the fiscal year 1921-22, 44 vessels register tonnage 32,163 entered the port; 45 vessels register tonnage 32,217 cleared.

Penetanguishene Harbour, Ont.—is on SE. shore of Georgian bay. The entrance points are North West point, or Michaud point, on the west and Asylum point on the east, about one-third of a mile apart.

From the entrance points the harbour runs in a southerly direction for $3\frac{1}{2}$ miles to the bottom of a slightly broader expanse, named South basin. The breadth of the harbour inside the entrance averages from one-third to two-thirds of a mile. A conspicuous landmark is the provincial asylum on high ground eastward of the entrance.

Whisky Island.—Whisky island at the entrance to the harbour is $\frac{1}{4}$ mile to the east of Sloane point and about $\frac{2}{3}$ of a mile NE. from Asylum point.

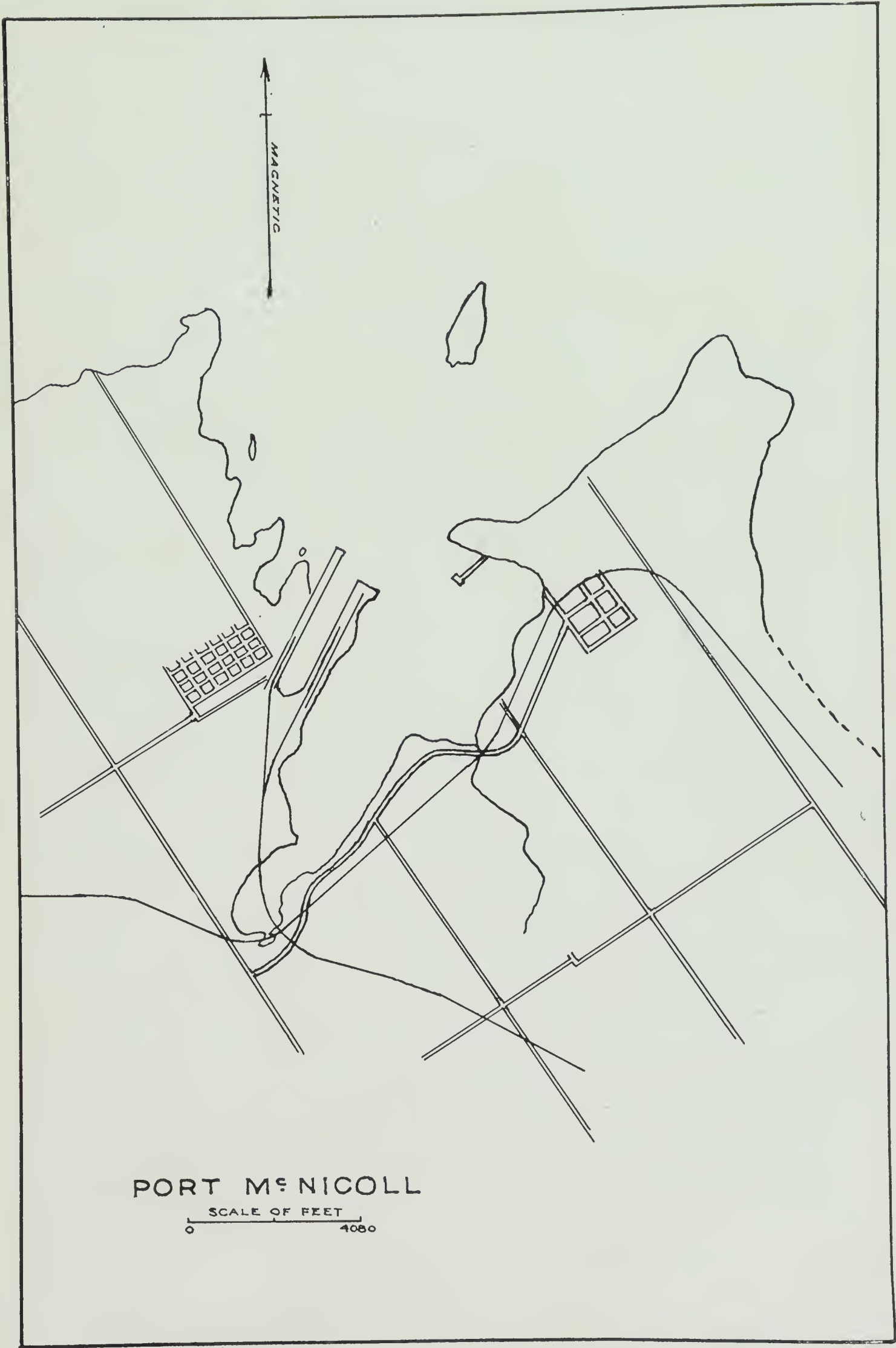
Magazine Island.—Is inside the entrance about 300 yards off the east shore and a little over $\frac{2}{3}$ of a mile SSW. from Asylum point.

Depths.—The harbour has generally natural depths of from 20 to 30 feet, but at the entrance and abreast of the town to the Esplanade or town wharf, channels have been dredged to a depth of 18 feet.

Lights—Buoys.—For a description of lights and buoys in Penetanguishene harbour and approaches, and further hydrographic information, see Canadian Hydrographic Office 1919 "Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay," pages 210 to 213 inclusive, covering chart No. 83, also Department's 1923 "List of Lights and Fog Signals."

Directions.—See Canadian Hydrographic Office 1919 "Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay," pages 213 and 214, covering chart No. 83.

Wharves.—Tannery wharf northeast of town, 173 feet long on north side 39 feet wide and along the breastwork the wharf is 186 feet long. Water 15 feet deep at the end, 10 feet in the centre and 9 feet on the south side; Penetanguishene dock government wharf, east side depth of water 13, $10\frac{1}{2}$, and 7 feet, front 13 feet and 9 feet at the NE. corner. There is a dock running along shore 1,250 feet in length with a railway track upon it; the depth of water is about 9 feet in the centre and 13 feet at the NE. corner; McGibbon's wharf is 110 feet long, with $7\frac{1}{2}$ feet of water; Firstbrooks wharf is 500 feet long and 53 feet wide at NE. corner, depth of water about $7\frac{1}{2}$ feet. On the west side of the harbour are the Charles Beck wharves. Nos. 1, 2, 3, 4 and 5. They are of large size, depth of water $10\frac{1}{2}$ feet at No. 1, 12 feet at No. 2, 7 feet at No. 5; also northward of the Esplanade are Becks sawmills and wharves to which a narrow channel with a depth of 17 feet has been dredged. In the south basin Firstbrooks box factory wharf has a depth of 13 feet alongside.



Supplies.—All stores necessary for vessels, and good water can be obtained.

Customs.—Penetanguishene is a port of entry.

Communication.—Postal and telegraph, and is a station on the Penetanguishene branch of the Northern division of the Grand Trunk. Steamer "Midland City" Georgian Bay Co. to Georgian bay ports, calls daily; has less frequent steamboat connection by some other steamship companies.

The Town of Penetanguishene, Simcoe Co., is built on the rising ground on the east side of the harbour, and is extremely picturesque, has good hotels, banks, a hospital and Carnegie library; had in 1921 a population of 4,037.

Shipping.—During the fiscal year 1921-22, 37 vessels, register tonnage 2,543 entered the port; 36 vessels, register tonnage 2,485 cleared.

Port Elgin Harbour, Ont.—east shore of lake Huron—4 $\frac{1}{4}$ miles eastward of MacGregor point—is a small artificial harbour at bottom of a small bay. A breakwater runs 600 yards SSW. from NE. shore of the bay, sheltering a space of about 8 acres, with depths over 6 feet. There is a narrow dredged cut to the government wharf in the harbour, which is only used by small vessels, only 10 feet can be carried to the wharf. The dredged cut is marked by buoys.

Lights—Daymarks.—For description of lights and day marks in harbour, see 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 18, covering chart No. 91, also Department's 1923 "List of Lights, Inland waters."

Directions.—See 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 19, covering chart No. 91.

Government Wharf.—SE. 170 yards from central part of the breakwater, is a government landing wharf, parallel to it, 130 yards in length.

Repairs.—Light repairs to machinery can be made at Port Elgin.

Supplies in moderate quantities are obtainable.

Town of Port Elgin, Bruce Co.,—has usual telegraph, telephone and express offices, and a station on Harrisburg and Southampton branch of Middle division of Grand Trunk Railway. Population in 1921 was 1,291.

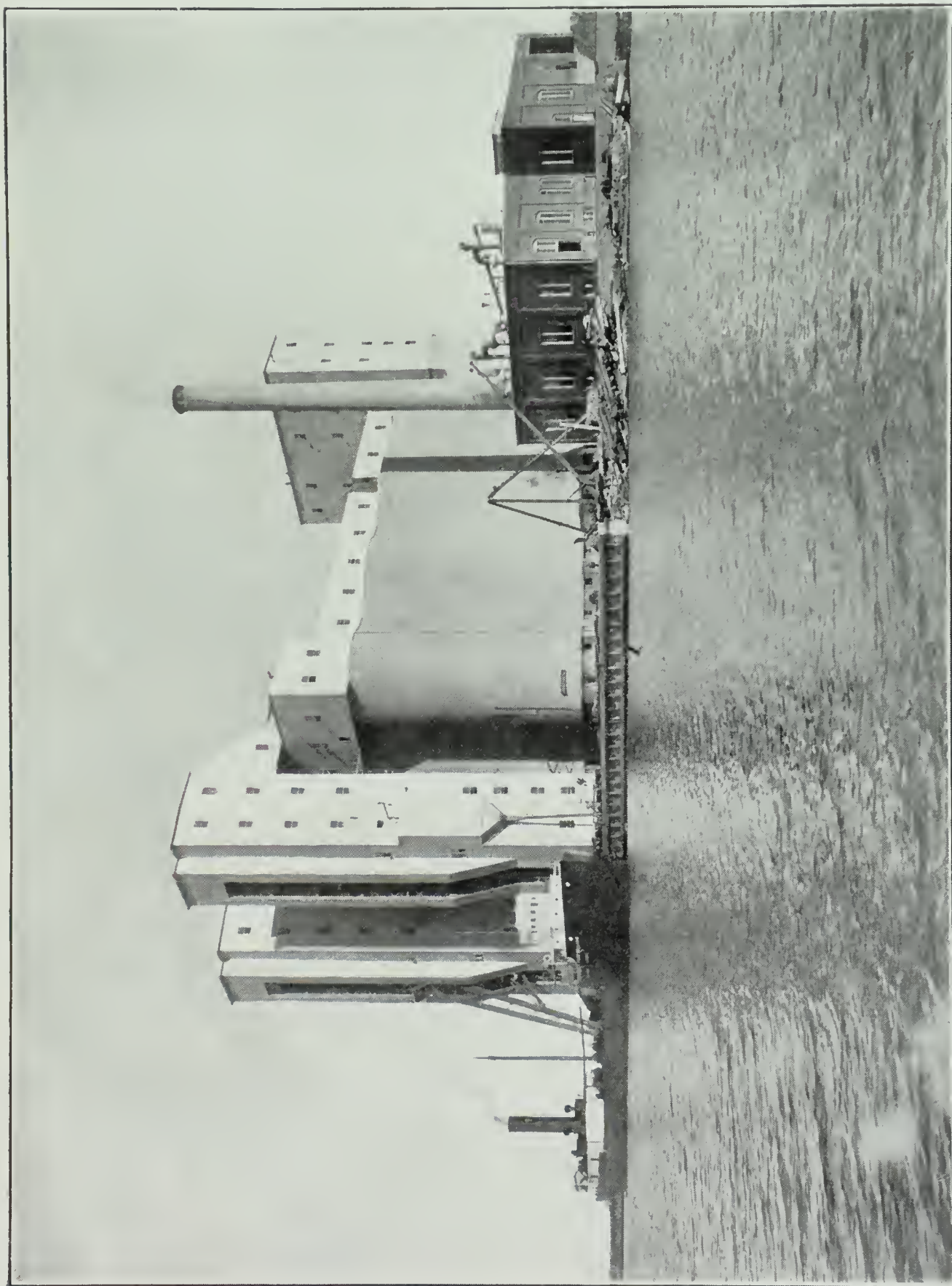
Port McNicoll Harbour, Ont.—Is the next harbour east of Midland at the east end of Georgian bay—is an artificial harbour on west side of Hog bay. The basin, half a mile long in a NE. direction and 200 yards wide has a depth of 24 feet. Concrete docks extend on the west side and on the greater part of the east side of the basin with railway sidings. On the west side is a large grain elevator with a capacity of 4,000,000 bushels.

Freight sheds 800 and 500 feet long are built on the east side of the basin.

It is the Georgian bay port of the C.P.R. steamships running to Port Arthur and Fort William.

Buoys.—A spar buoy is moored at the junction of the Midland point and Victoria harbour ranges. The channel of approach to Port McNicoll from the line of Victoria harbour range lights, a distance of about $\frac{1}{2}$ mile is marked on NW. side by a gas buoy showing a red occulting light.

Storm Signals are shown at Port McNicoll.



Port McNicoll, Ont. View of C.P.R. wharf and elevator. Capacity 4,000,000 bushels.

Communication.—Postal and Telegraph is the terminus of the Port McNicoll division of the C.P.R. The C.P.R. steamships run 3 times a week to Fort William.

Town of Port McNicoll.—Is the creation of the C.P.R. and the greatest grain receiving port on Georgian bay. Population in 1921 was 1,074.

Trade.—For the fiscal year 1921-22, value of imports \$289,667; exports not given.

Shipping.—During the fiscal year 1921-22, 316 vessels register tonnage 906,908 entered the port; 401 vessels register tonnage 1,179,286 cleared.

Sault Ste. Marie Harbour, Ont.—is on north shore of St. Mary's river about 17 miles below its head; it comprises the dredged approaches to the Sault Ste. Marie canal, and deepened approaches to the different docks.

Canadian Canal.—This canal is cut through red sandstone, being about one and four-tenths of a mile in length from the extreme ends of the upper and lower entrance piers, and with an average width of 150 feet.

A masonry lock is located near the lower end of the canal 900 feet long by 60 feet wide and with $19\frac{1}{2}$ feet of water over the sills. The lift is from 17 to 21 feet, depending upon the stage of the water, the gates and culverts being operated by electricity.

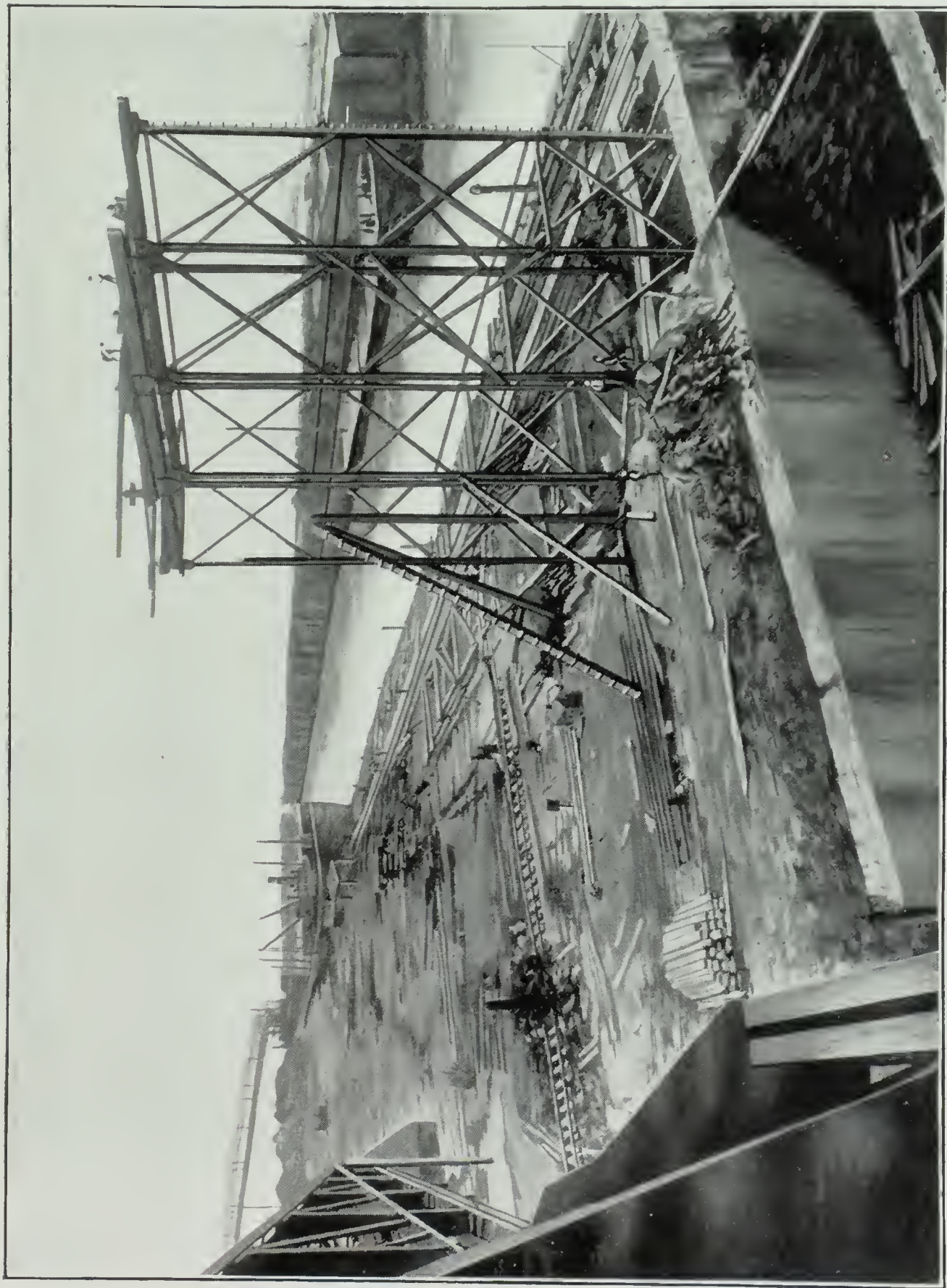
United State Canals.—Of these there are two each having two locks abreast. In the southern canal, the larger of the two locks, called the Poe, is 800 feet long by 100 feet wide and with an available depth of $18\frac{1}{2}$ feet on the sill. The smaller lock, known as the Weitzel, is 515 feet in length and 60 feet in breadth and with a depth of $13\frac{1}{2}$ feet. The locks in the southern canal are operated by hydraulic power. The length of the locks in the northern canal is 1,350 feet, breadth 80 feet, and depth on the sill $24\frac{1}{2}$ feet. The locks in the northern canal are operated by electricity.

Canadian and United States Canals.—For a further description of the Canadian and United States Canals at Sault Ste. Marie, bridges, lights, light buoys, and spar buoys, and the Canadian and American channels through Vidal shoals, see 1922 Canadian "Sailing Directions for the Canadian Shores of Lake Superior," pages 16 to 20 inclusive, United States covering chart No. 63.

Wharves, Docks.—The Canadian Government wharf, one mile south eastward of the lower entrance of the Canadian canal is of concrete and extends in a SW. direction 645 feet from the shore with an L end extending about 350 feet WNW.—there are large freight sheds on the wharf, and an electric light on SE. corner. There is a depth of water of 20 feet along the outer face of the wharf. A berth, 200 feet square, adjoins the east side of the wharf to accommodate small steamers.

The Imperial Oil Ltd. wharf, of concrete construction, 240 feet long and about 25 feet wide at the foot of Lucy terrace with offices, warehouse and storage tanks. This wharf is used by the Co's own fleet for supplying purposes and also by small freighters for loading and unloading also for supplying fuel to launches, etc.

The Algoma Coal and Metal Co's Dock (known locally as "Cohen's Dock") of wooden superstructure on pile decking, the latter is the only part now in



Sault Ste. Marie. Cold Storage. Coal loader Dock.

any way serviceable, the flooring of the wharf being rotten and in a very unsafe condition. The Coal chute is still on the dock. This dock is not now used.

Adjacent to the basin on the west side of the Government wharf is the Sault Ste. Marie Coal and Wood Co's wharf with elevated trestle bridge and electrically controlled top-cars for handling coal cargoes by hoist and clam-shell.

About 200 yards west of this coal dock is a pile and crib dock owned by I. J. Downey & Sons and used for sand and gravel chiefly and also for cord-wood and slabs.

The New Ontario Dock and Coal Co's dock is used for package freight and passenger service of the Canada Steamship Company's fleet. Upon it is a large area and coal chutes for fuelling steamboats of all classes. A slip 520 feet long by 75 feet wide was dredged alongside this wharf in 1912 and 1913.

The coal dock at the foot of Elgin street is owned by the Algoma Central Terminals Ltd., and operated by the Algoma Central and Hudson Bay Railway Co. This is the largest coal dock on the river, with storage capacity of 100,000 to 150,000 tons of bituminous coal. The storage area, approximately 300 feet by 600 feet is a mixed fill of rock and dredged material from the river, and is spanned by a Brown hoist unloading bridge with a span of 284 feet between runways and 60 feet high from surface of storage area to under side of truss. The bridge is electrically operated, rope-driven, with bucket of 3-ton capacity, capable of handling 200 to 300 tons of coal per hour. The slip in front of the dock is 130 feet wide, cut in at right angles to the river with 600 feet of available dock front of timber construction. Depth of water 21 feet and the largest lake carriers can berth and unload at this dock. The premises are connected with the terminals yard of the Railway by switching tracks and since the dock has been in operation, about 10 years, it has handled approximately 100,000 tons of coal annually. This includes all the coal consumed by the Lake Superior Paper Company and other industries in addition to fuel for the Railway.

Six docks of the Lake Superior Corporation comprise:

(a) Ferry dock used exclusively for ferry service between the Canadian city of Sault Ste. Marie and the United States city of the same name, a slip 300 feet by 60 feet has been dredged at this wharf.

(b) The north and south wharves along the tail races provide facilities for handling machinery and repair work can be done to advantage at shops situated a short distance from them.

(c) The company's commercial wharf is used principally in connection with its own industries but is available with its rail connection for general service. Large quantities of pig iron are shipped from this dock. It is on the lake Superior level.

(d) The ore wharves are used exclusively by the Algoma Steel Corporation in connection with the steel industry and are situated to the west of the commercial wharf forming an extension to it.

McLean's dock on easterly side of slip alongside the ferry dock dredged to about 18' 0" used for wood and sand and gravel and for owner's tugs.

Customs.—Sault Ste. Marie is a port of entry to which all Canadian customs outports in the north channel of lake Huron are subject as far east as Thessalon, and on lake Superior as far northward as Michipicoten harbour.

Radio-Telegraph.—The Canadian station is on the high land eastward of the town—has a working radius of 350 miles, call letters V.B.B.; open all year.

Repairs.—There is a dry dock on American side and Northern Foundry Co. on Canadian side and other plants all well adapted for ordinary repair work.

Supplies.—Provisions of all sorts are obtainable in quantity.

Port Charges.—Are Harbour Master's dues.

Communication is a station on main line of Algoma Central and Hudson Bay Railway, and a terminal of Sault Ste. Marie division of Canadian Pacific Railway, Sault Ste. Marie to Sudbury.

Sault Ste. Marie and Bruce Mines line calls three times a week. Canadian Pacific Steamship line between Port McNicoll and Fort William three times a week. Northern Navigation Co., Lake Superior division three times a week. Owen Sound Transportation Co. fortnightly. SS. *Michipicoten* Dominion Transportation line Sault Ste. Marie and Michipicoten harbour twice a week.

City of Sault Ste. Marie, district of Algoma, has a large number of manufacturing industries supplied with power from the St. Mary's falls. In 1920 the city had 125 industrial establishments employing 3,488 hands; value of products \$38,274,952. Population in 1921 was 21,092.

Trade.—For the fiscal year 1921-22, value of exports \$10,692,816; of imports \$5,565,106.

Shipping.—During the fiscal year 1921-22, 2,413 vessels register tonnage 1,699,922 entered the port; 1,306 vessels register tonnage 1,063,617 cleared.

Lloyd's Agent.—Elmer W. West.

Southampton Harbour, Ont.—east shore of lake Huron about 1 mile SE. of mouth of Saugeen river, comprises the area between Chantry island and the mainland, is protected on the northward by 2 breakwaters, the western one from the NE. end of Chantry island running eastward with a curve for 600 yards, the eastern one from the main shore in a NW. direction for the same distance leaving a passage between the two of 200 yards in width. The harbour is exposed from the southward and can only be used by light draught vessels.

Lights.—On east side of Chantry island, a white, circular stone tower shows 94 feet above high water a white fixed light.

Range Lights.—On east end of west breakwater, a white square wood tower shows 28 feet above high water a red fixed light.

On shore south of landing pier, 7,914 feet, 178° 30' true from front a white square wood tower shows 31 feet above high water a white fixed light.

Lights in line lead to opening in breakwater at north end of harbour.

Light and Bell Buoy.—About 9 cables northward of west breakwater light, a red, steel, cylindrical gas and bell buoy marks north end of Chantry island bank.

Fog Signal.—A storm fog whistle is operated in brick building a quarter of a mile SW. from mouth of Saugeen river.

Pier.—The Grand Trunk Railway pier with cement walls extends 200 yards off shore close south of east breakwater, has depth of 12 feet at outer end.

Storm Signals are hoisted from mast near the waterworks a quarter of a mile SW. from mouth of Saugeen river.

Life Boat is stationed at Southampton.

Supplies.—Limited quantities of ships supplies are to be had.

Town of Southampton, Bruce Co., on south side of Saugeen river, is somewhat of a summer resort; has factories and saw-mills, public school, churches—telegraph, telephone and express offices—is a station on Harrisburg and Southampton branch of middle division of Grand Trunk Railway. Population in 1921 was 1,537.

Shipping.—During fiscal year 1921-22, 1 vessel register tonnage 59 entered and cleared the port.

Thessalon, Ont.—north shore of North channel of lake Huron, is on the east side of point of same name at the mouth of the Thessalon river which flows through the town.

Anchorage.—On east side of peninsula, half way between the SW. extremity of Thessalon point and the town, is good anchorage and shelter from westerly winds in 5 to 6 fathoms.

Light on Thessalon point, a white, square, wood tower shows 30 feet above high water, a white fixed light. Hand fog horn attached.

Directions.—See 1919 Canadian Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay, page 321, covering chart No. 95.

Supplies.—Ship's supplies are obtainable.

Town of Thessalon, District of Algoma.—Built on both shores of Thessalon river, is connected by motor bus with C.P. Railway station distant $1\frac{1}{2}$ miles. Has churches, post and telegraph offices, and is a port of call for a number of Georgian bay and North Channel steamship lines. Population in 1921 was 1,651.

Shipping.—During fiscal year 1921-22, 300 vessels, register tonnage 80,680 entered the port; 202 vessels, register tonnage 46,986 cleared.

Tobermory Harbour, Ont.—At N.W. end of Saugeen peninsula—gives perfect shelter from all winds—consists of Eastern and South-West arms. The latter extends from Lighthouse point the NW. entrance point, W. by S. a little over $\frac{1}{2}$ a mile with an average breadth of 100 yards with depths of from 9 fathoms at entrance to 6 fathoms near the head.

Middle point divides the two arms—close south of Middle point is an indentation, Fisherman cove, at southern end of which is a wharf from which the shore trends SW. nearly $1\frac{1}{2}$ cables to the head, the depth of the arm from abreast Middle point is about $\frac{1}{4}$ of a mile and average breadth about the same as that of the South West arm, the narrowest part being abreast of wharf at S. end of Fisherman cove. Depths in East arm range from $4\frac{1}{4}$ to $3\frac{1}{4}$ fathoms. Owing to the narrowness of the arms, vessels make fast to ring bolts sunk into the rock, floating booms keeping them from touching.

Light.—On Lighthouse point, SE. extreme, a white, hexagonal, wood tower shows 40 feet above high water a red fixed light. Hand fog horn attached.

Storm Signals are shown from a mast on high ground near Middle point west of Fisherman cove.

Wireless Station.—A wireless station with 2 masts, 185 feet high and 150 yards apart, with dwelling house and office of staff are on North point, $2\frac{3}{4}$ cables northward of Middle point.

The range is 350 nautical miles, call letters V.B.D.

Wharves.—Besides the wharf already mentioned at south end of Fisherman cove, there is another close SW. of it on west shore of Eastern arm, depths alongside both of 18 feet; there is also a small sawmill on west shore of Eastern Arm near its head.

Communication.—Postal and telegraph. The nearest railway station is at Wiarton.

Victoria Harbour, Ont.—south east shore of Georgian bay—is on the east side of Hog bay opposite Port McNicoll. From Bergie point NE. entrance point of Hog bay, a shallow bight, 1 mile wide, $1\frac{1}{2}$ mile deep, runs for rather more than half way to the head of Hog bay. Victoria harbour is at the NE. corner of this bight inside Bergie point. The shallow bight is almost filled with loading piers and booms for holding logs.

Wharves.—Just inside Bergie point is the Coal wharf of the Victoria Harbour Lumber Co., 330 yards long in a SW. direction from the shore, with depth of 19 feet at its outer end.

Nearer the town is the government wharf much shorter, also with depth of 19 feet at its head.

Range Lights.—On Bergie point, a white, square, wood tower shows 27 feet above high water a red fixed light. On hill behind village 4,200 feet 149° true from front, a similar tower shows a similar light.

Village of Victoria Harbour.—Simcoe Co., carries on an extensive lumber industry and has 3 sawmills. It has post and telegraph offices—is a station on the Midland and Lindsay branch of the Grand Trunk Railway. Population about 1,500.

Warton Harbour, Ont.—west shore of Georgian bay—is at the bottom of Colpoys bay which runs in a SW. direction for 9 miles from the SW. extreme of White Cloud island at its entrance, to the head. The width of the bay at the mouth is 3 miles, and at the town of Warton $\frac{3}{4}$ of a mile, the shores of the bay may be approached everywhere to within 200 yards.

Anchorage.—From abreast of the village of Colpoys on west shore of harbour, $2\frac{1}{4}$ miles northward of Warton, is good anchorage in depths under 10 fathoms to the head of the bay. About 300 yards off Colpoys village where there is a small steam saw-mill, is good anchorage in 5 fathoms, and in the same depth off Warton.

Light.—Near outer end of breakwater on west side of harbour, a mast, white shed at base, shows 19 feet above high water a red fixed light.

Wharves.—The Government wharf or breakwater of concrete, 30 feet wide, extends from west shore of harbour in a southeast by east direction for 600 feet,

and then S. by E. for another 100 feet with depths of from 18 to 15 feet alongside.

At the bottom of the bay are 2 town wharves, on one of which is a freight shed. On east shore of harbour between the village of Oxenden and Wiarton is another wharf.

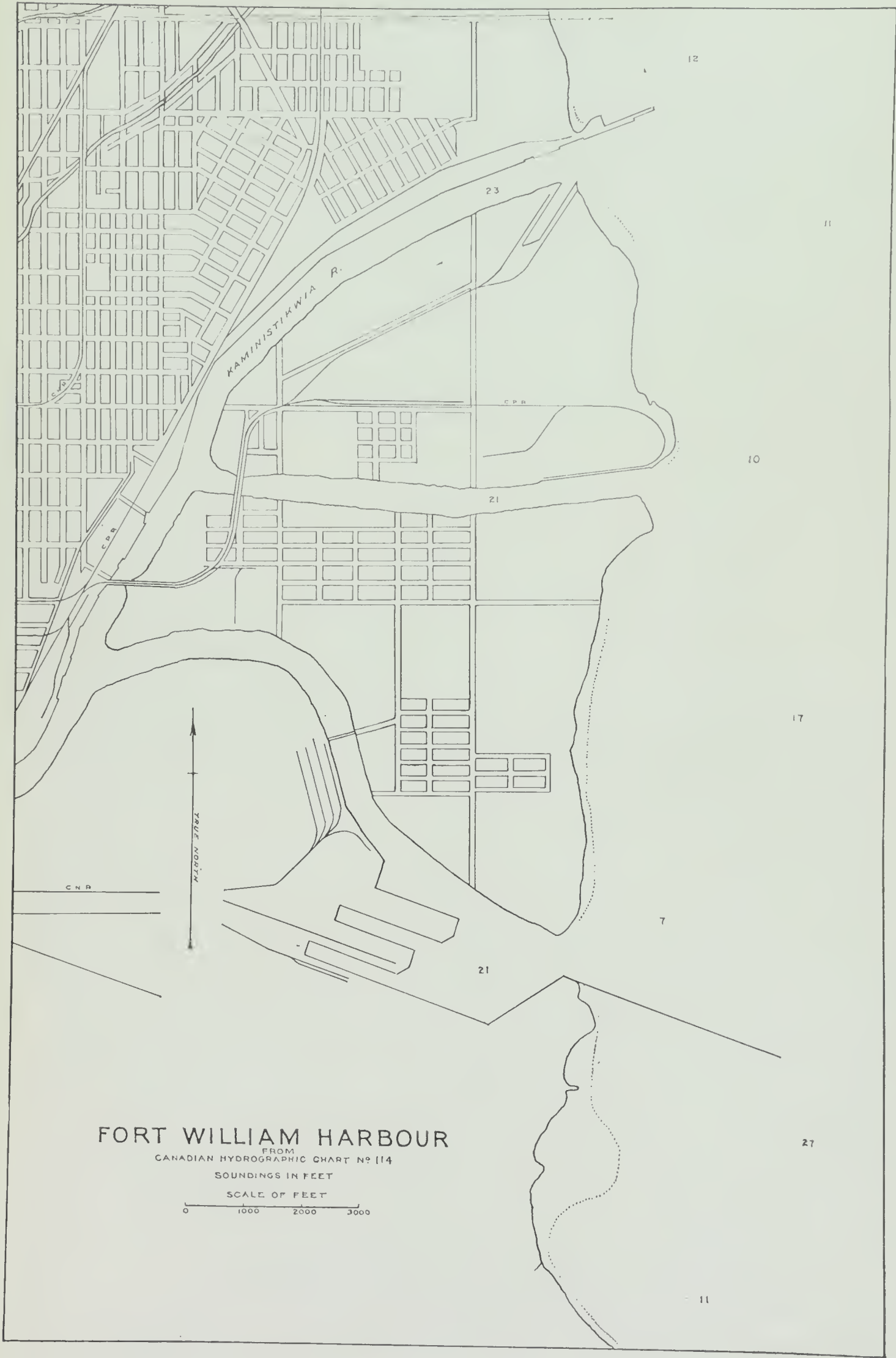


Warton, Ont., Harbour.

Storm Signals are shown at Wiarton from mast on Government wharf.

Town of Wiarton, Bruce Co., is built round the bottom of the harbour, contains churches of all denominations, bank, post and telegraph offices, and is the terminus of Wiarton branch of middle division of Grand Trunk Railway. Population in 1921 was 1,726.

Shipping.—During the fiscal year 1921-22, 58 vessels register tonnage 7,760 entered the port; 48 vessels register tonnage 6,722 cleared.



LAKE SUPERIOR.

Fort William Harbour, Ont.—district of Thunder bay, Ontario, is situated on the west side of Thunder bay, north shore of lake Superior.

The bay is a fine sheet of water having a depth of $3\frac{1}{2}$ fathoms around the shore at the mouth of the Kaministikwia river and 25 feet in the channel. The water increases in depth to the 10 fathom line, and beyond this line the water is deep everywhere reaching to 40 fathoms well out in the bay south and east of Fort William.

Approaching this harbour are the Welcome islands situated about $4\frac{1}{2}$ miles southeast from the harbour.

The Kaministikwia river has three channels emptying into the bay at three distinct points, viz: the Kaministikwia channel, the McKellar channel and the Mission channel.

There are docks at the mouth of each channel and at the junction of the McKellar channel with the main river is a turning basin and another above the C.P.R. lift bridge, at the junction of the Mission channel with the main river.

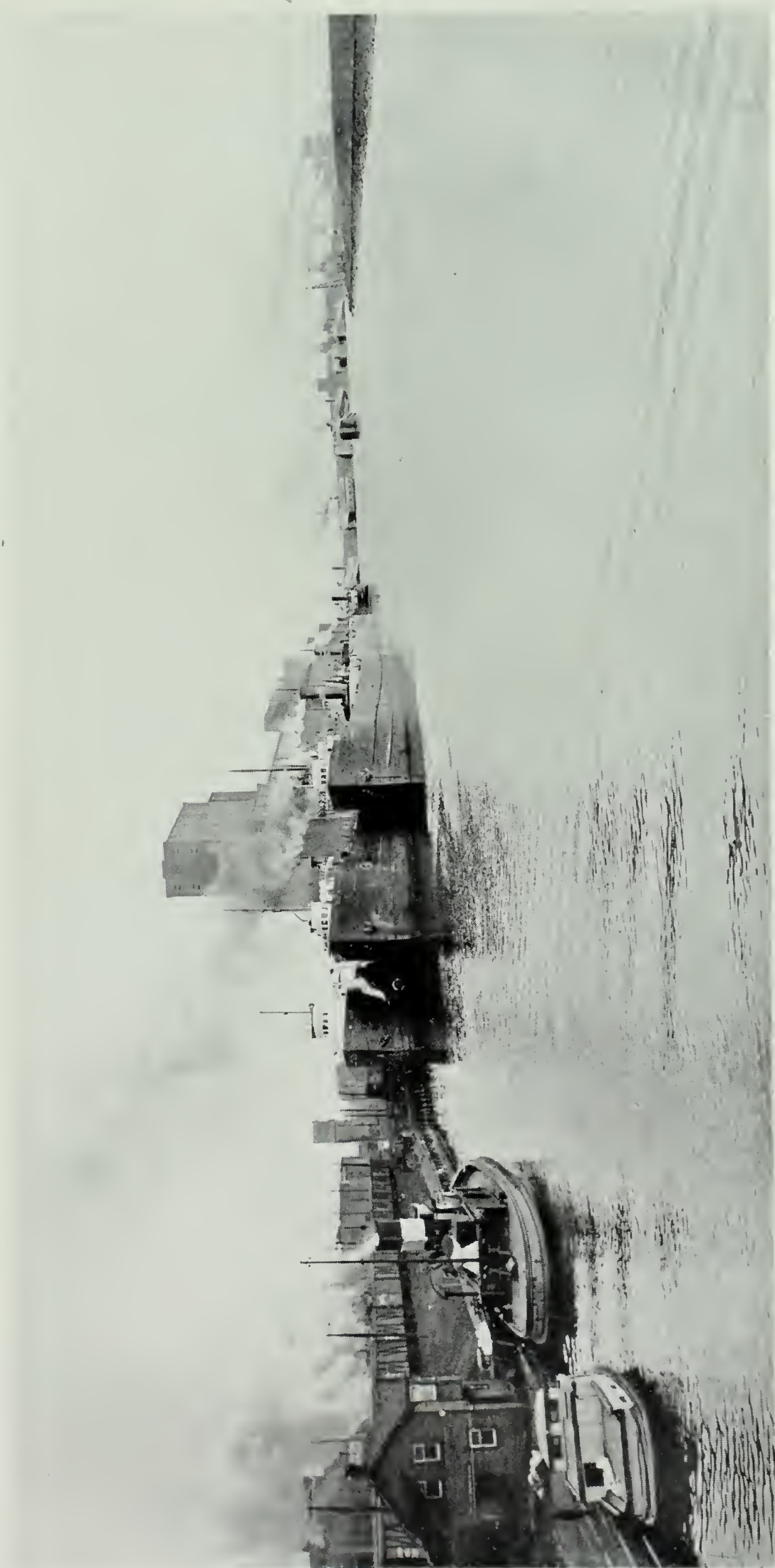
The natural channels have been dredged to a depth of 25 feet the Kaministikwia was widened to 600 feet, the Mission channel to 500 feet and the McKellar channel to 400 feet. The depth of water in front of the landings is 22 feet except in front of the Empire and Northwestern elevators.

Taking the waterfront on both sides of the river and channels the harbour has a total frontage of about 22 miles of landlocked harbour, 8 miles of which are constructed wharves. Part of this frontage is on the mainland and part on the islands formed by the different channels mentioned which run from the main river and empty into Thunder bay.

Navigation Season.—Navigation opens in this district about the 19th of April and closes about the 12th of December.

Lights—Buoys.—For description of lights, buoys, etc., in Fort William harbour channels, and further hydrographic information, see Canadian Hydrographic Office, 1922, "Sailing Directions for the Canadian Shores of Lake Superior," pages 165 to 169 inclusive, covering chart No. 114, also Department's 1923 "List of Lights and Fog Signals on the Inland Waters."

Wharves—Docks—Elevators.—The wharves, docks and elevators are as follows in rotation; beginning at the mouth of the Kaministikwia river is the Empire elevator on the mainland side with a storage capacity of 1,750,000 bushels; next is the Imperial Oil Co.'s dock, warehouse and tanks. On the opposite side of the river on Island No. 1 are two C.P.R. freight sheds. Proceeding up the river on the mainland side are situated the C.P.R. Co.'s docks and hard coal sheds, with a capacity of 300,000 tons; next is the C.P.R. freight shed and another under construction; the Gillespie Elevator C (C.P.R.) with a capacity of 1,195,000 bushels; then the Gillespie Elevator A (C.P.R.) with a capacity of 482,000 bushels; then the Grain Grower's Elevator E (C.P.R.) capacity of 1,976,000 bushels; next in order is the Grain Grower's Elevator B (C.P.R.) with a capacity of 1,039,000 bushels; then the city wharf subway dock and tug office; then follows the C.P.R. Co.'s freight shed and passenger



Fort William Harbour. Looking from City Wharf to Mouth of Kaministiquia River.

steamer landing which is under construction, and the C.P.R. freight offices and docks and new subway.

Across the river on Island No. 2 is the Great Lakes Dredging Co's plant and machine shop next above is the Gillespie elevator with a capacity of 225,000 bushels.

Following up on the mainland side from the C.P.R. freight offices is the Grand Trunk Pacific dock and freight shed; then the Ogilvie flour and feed mills and elevator with a capacity of 2,000,000 bushels; next in order is the C.P.R. bridge across the Kaministiquia river to Island No. 2. The railway line proceeds to a bridge across the McKellar channel to the C.P.R. freight shed mentioned before on Island No. 1, also to the C.P.R. soft coal dock with a capacity of 2,000,000 tons at the mouth of the McKellar river.

Following the mainland above the bridge is the Murphy coal dock and sheds; the International Harvester Co's dock and warehouse opposite the turning basin at the junction of the Mission channel with the main river; then a C.P.R. freight shed and dock; next the Kaministiquia Power Co.'s aerial cable over the river, height 135 feet from the centre of the river; then comes the C.P.R. Elevator D, capacity 7,500,000 bushels. Next in order on the south side of the river is the power house in connection with the Imperial Oil Co's storage tanks. On the north side of the river further up is the Consolidated elevator with a capacity of 1,750,000 bushels; then the Fort William elevator, capacity 1,075,000 bushels; next the Western Terminal elevator, capacity 2,250,000 bushels; there is also an addition with a capacity of 1,000,000 bushels, being added to this elevator. Next is the Patterson elevator with a capacity of 1,300,000 bushels, this elevator has a leg for the purpose of unloading grain cargoes from vessels. Next is the Grand Trunk Railway swing bridge leading to the terminals at the mouth of the Mission channel; then the Plymouth Cordage Co's dock and large storehouse; next the Canada Iron Corporation docks and plant; then the Canada Car and Foundry Co's docks and sheds; the Northwestern elevator, capacity 2,800,000 bushels and the Mutual elevator with a capacity of 500,000 bushels. At this point there is an extra large turning basin 1,350 by 1,800 feet, which is $5\frac{1}{2}$ miles from the mouth of the Kaministiquia river.

The ice in the harbours is broken by tugs to enable vessels to proceed to the elevators and coal docks.

At the mouth of the Mission channel on the south side is a breakwater, 4,100 feet long, projecting out into the bay with an Aga occulting white light situated on the east end. To the south of the turning basin is situated the Fort William Pulp and Paper Co's Plant with a capacity of 120 tons of ground pulp per day; west of this plant is the Iron Pyrites Ore dock; then two Canadian National freight sheds and across the slip is the Grand Trunk Pacific Elevator, capacity 5,500,000 bushels. On the same side of the river ascending the channel are the Fort William Coal Co's hard coal sheds and soft coal docks; proceeding up the river on Island No. 2 is the Canada Starch Co. Ltd. and on the opposite side of the river on the mainland is the Detroit Sulphite Pulp and Paper Co's pulpwood loading plant.

Floating Dock.—The Canadian Towing and Wrecking Co. has a floating dry dock 100 feet long, inside width 58 feet, admitting vessels of 15 feet draught.



Fort William Harbour. Looking up the Kaministiquia River.

Storm Signals are shown from a signal mast near the Ogilvie elevator.

Port Charges.—Are harbour master's dues, 50 cents for vessels of 50 tons up to \$7 for vessels of 1,000 tons or over, twice a year.

Ships Supplies obtainable are: chains, cordage, axes, lifeboat equipment, oars, beeswax, varnishes, marine paints, oakum and caulking cotton, pitch, tar, wastes, ropes, tackle, blocks, wire ropes and blocks, bolts, rubber clothing and boots, brooms, brushes, marine glue, oilskins, oils, greases, packings, pumps, pipe and fittings.

Customs.—Fort William is a port of entry.

Communication.—The main lines of the C.P.R. and Canadian National pass through the city, and it is a port of call for the Canadian Pacific and Northern Navigation Co's steamers.

The City of Fort William was originally founded by French traders in 1669 and known as Fort Kaministiquia, the name early in the last century was changed to Fort William, after one of the directors of the North West Co'y. Together with Port Arthur it forms the western terminus in Canada of Great Lakes navigation.

The population in 1921 was 20,541, and in 1920 it had 86 industrial establishments, employing 1,601 hands; value of products \$13,707,742.

Trade.—The principal industries are flour and feed mills, starch works, car works, and in the adjoining districts lumbering, mining and electric power development.

The total capacity of the elevators in Fort William is 30,105,000 bushels, and the total grain shipped averages over 100,000,000 bushels yearly.

The coal docks at the mouth of the McKellar river have a capacity of 2,000,000 tons. Extensive quantities of iron pyrites are shipped from the port.

For the fiscal year 1921-22, the value of exports was \$64,717,809; of imports \$12,748,012.

Shipping.—During the fiscal year 1921-22, 1,239 vessels register tonnage 3,448,536 entered the port; 1,242 vessels register tonnage 3,470,203 cleared.

Lloyd's Agent.—See Port Arthur.

Jackfish Bay Harbour, Ont.—on north shore of lake Superior, about midway between Peninsula harbour and Bottle island is a good harbour of refuge.

St. Patrick island $3\frac{1}{4}$ cables long NE. and SW. lies at the entrance; the main channel is to the westward of St. Patrick island and is about half a mile wide. The portion of Jackfish bay north of St. Patrick island is about 1 mile square. Moberly bay extends to the NW. and is blocked with islands, the NE. arm extending for about 1 mile, with width of $\frac{1}{4}$ of a mile, is free of obstructions.

Teed shoal, with 16 feet least water, lies 140 yards off SW. part of St. Patrick island.

Little Nick rock 2 feet above water lies $7\frac{1}{2}$ cables northward of Teed shoal, and a shallow bank runs 50 yards to the south, apart from these shoals the harbour is clear, with depths in the main portion of from 4 to 24 fathoms, and in the NE. arm of from 10 to 19 fathoms.

Anchorage.—The safest anchorage is in the NE. arm where in 10 fathoms mud there is land locked shelter.

Light.—On SW. extremity of St. Patrick island a square steel skeleton tower painted red shows 39 feet above high water a white fixed light.

Coal Dock.—The Canadian Pacific Railway coal dock at the village is 450 feet long with unloading machinery on south side of the dock where there is 18 feet of water. On north side only 15 feet of water is available for a short distance from the end.

Village of Jackfish.—On shore NE. of St. Patrick island is a station on main line of C.P.R. and a post office and general store where moderate supplies can be obtained. It is a coaling depot for the Canadian Pacific Railway.

Michipicoten Harbour, Ont.—NE. shore of lake Superior—is in the NW. corner of Michipicoten bay—the harbour lies immediately NE. of Little Gros Cap peninsula which protects it from the westward, it is, however, quite open to the southward.

The peninsula is a high bold cape running out into the lake from the north shore for $1\frac{1}{2}$ miles in a SE. direction, depths in the harbour range from 2 to 6 fathoms.

The small basin at NE. end of harbour has a rock with 18 feet on it, at its entrance, nearly midway between the outer ends of the two piers built in the basin. The portion of the harbour between the basin and Little Gros Cap is known as Oakes cove.

Anchorage may be had in Oakes cove in 18 feet of water, over sand.

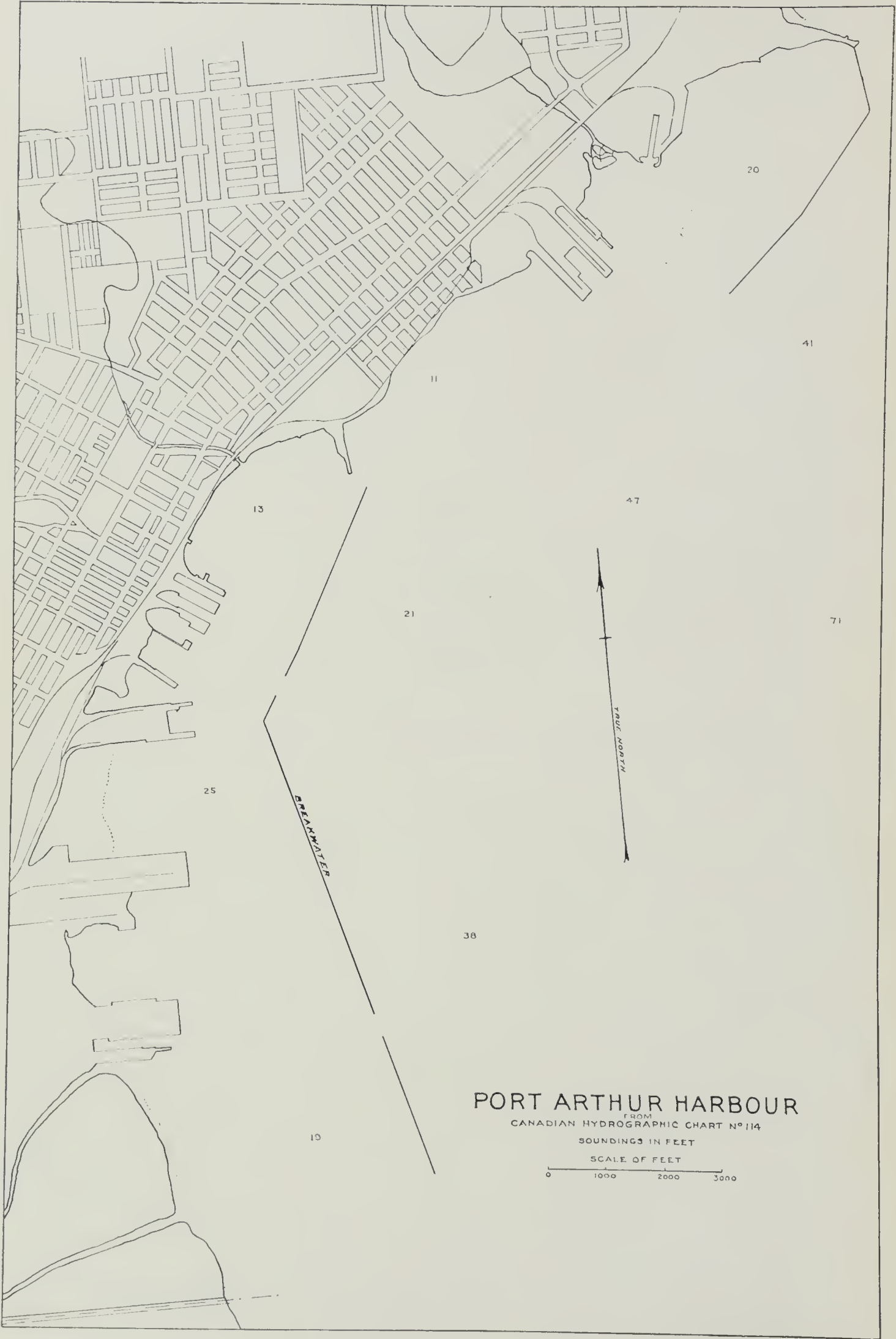
Light.—Near SE. extreme of Little Gros Cap (Perkwakwa point), a white, square, wood tower shows 70 feet above high water a white fixed light.

Hand fog horn attached.

Wharves.—There are two known as the Commercial pier and the Ore dock, the former, 50 feet in width, extends 600 feet south from the shore. It has two lines of track and is lighted by a row of electric lamps. Along its east side is a dredged slip with 19 feet of water, 170 feet in width but close alongside the pier 14 to 17 feet of water will be found. The west side has a depth of from 16 to 18 feet. The ore dock, 530 feet long, trends a little east of south from the shore narrowing the distance between the outer ends of the piers to 170 feet. The east side, from which the loading chutes project, has a depth of from 15 to 18 feet. In the basin formed between the two piers 400 feet long with an average width of 240 feet, the least depth of water is 19 feet to 200 feet off the beach.

Communication.—The Michipicoten harbour branch of the Algoma Central and Hudson Railway joins the main line at Hawk junction 26 miles distant. The Dominion Transportation line calls here and also at the Government wharf at the mouth of the Michipicoten river, 3 miles SE., once a week.

Michipicoten harbour is the lake terminal of the Algoma Central and Hudson Bay Railway—has a post office, telegraph office, general store and is a Customs port of entry. Population about 100.



Shipping.—During the fiscal year 1921-22, 22 vessels register tonnage 29,586 entered and cleared the port.

Port Arthur Harbour, Ont.—is on the west side of Thunder bay. The harbour frontage extends from Bare point on the NE. to within half a mile of the Kaministiquia river on the SW., a distance of $4\frac{2}{3}$ miles along the lake shore. The harbour protected by breakwaters is divided into Main Harbour North, Main Harbour Centre, and Main Harbour South.

Main Harbour North.—Comprises at present an area of 130 acres within the Bare point breakwater which runs south from Bare point for 1,200 feet and then SW. for 3,600 feet. It is proposed to lengthen this protective work for 2 miles in a SW. direction, which will quadruple the size of the basin.

Main Harbours, Centre and South, are formed by (1) the north breakwater extending off Horne elevator wharf at the north end of the harbour, in a S. 26° W. direction 3,650 feet to the main entrance. (2) the middle breakwater which starts from a point 366 feet S. 27° W. of the north breakwater, continues in this line for 500 feet and then S. 18° E. for 5,500 feet. (3) the south breakwater which after a gap of 375 feet, continues in the last direction (S. 18° E.) for 2,600 feet.

Main harbour south connects with Centre harbour and has an area of 430 acres.

Depths.—Leading into Main Harbour Centre is a dredged channel 350 feet wide and 23 feet deep, and in the harbour the limiting depths are from 21 to 20 feet.

The channel leading into Main Harbour South is 375 feet wide and 25 feet deep, with limiting depths in the harbour of from 19 to 25 feet.

The limiting depths in Main Harbour North range from 12 to 24 feet.

Season of Navigation.—Harbour opens about 19th of April and closes about 12th December. The ice in both Port Arthur and Fort William harbours is broken by tugs to permit vessels to proceed to elevators and coal docks.

Lights—Buoys.—For a description of lights, buoys, and other aids to navigation, and further hydrographic information, see Canadian Hydrographic Office 1922 "Sailing Directions for the Canadian Shores of Lake Superior," pages 160 to 163 inclusive, covering chart No. 114, also Department's 1923 "List of Lights and Fog Signals on the Inland Waters."

Dry Dock.—Half a mile SW. of Bare point is the plant and dry dock of the Port Arthur Shipbuilding Co. Length of dock over all 736 feet, width at top 98 feet, top width at entrance 77 feet, bottom width at entrance 72 feet, depth of water over sill 16.5 feet; a dredged channel 1,900 feet long, 200 feet wide, and 17.6 feet deep leads northerly to the dock off the Sask. Co-operative Elevator wharf.

Floating Dock.—The Canadian Towing and Wrecking Co. has a floating dock, 100 feet long, inside width 58 feet, admitting vessels of 15 feet draught.

Wharves, Elevators, Mills, Etc.—Next to the dry dock following along the shore is the Dominion Government fish hatchery. Next in line is the Thunder Bay Pulp and Paper Co.'s mill, capacity 60 tons of pulp per day. Then the Grain Growers' Elevator H., capacity 305,000 bushels. Next is the Saskatchewan ele-



Port Arthur Harbour — C.N.R. Railway Sheds.

vator, capacity 2,500,000 bushels. Then the Richardson elevator with a capacity of 2,000,000 bushels. This elevator has a leg for the purpose of unloading grain cargoes from vessels. Next in line is the Horne elevator with a capacity of 750,000 bushels, and wharf which extends in a southeasterly direction for a distance of 475 feet.

Following the shore line west of the Horne elevator is the Pigeon River Lumber Co.'s saw and planing mills. A few hundred feet in the same direction is the C.P.R. wharf and freight sheds. Across the slip is the C.N.R. freight sheds and wharves. At the base of No. 2 freight shed is the Dominion Fish Co.'s wharf and ice house. Following along the shore is the Canadian Towing and Wrecking Co.'s machine shop. Next is the C.N.R. elevator and workhouses A and B, with a storage capacity of 9,500,000 bushels. A few thousand feet farther along the shore are the C.N.R. Coal and Ore docks, with a capacity of 500,000 tons. This portion of the harbour lying between the C.N.R. Coal and Ore docks and extending to the Horne elevator and between the harbour line and the breakwater has an approximate depth of 20 feet. Southwest of the C.N.R. Coal and Ore docks is the Atikokan Iron Co. Further on is the Bawlf Grain Elevator Co. and the James Stewart Elevator Co. (these two elevators are under construction). Then the Thunder Bay elevator with a capacity of 1,500,000 bushels. Next is the Canadian Government elevator, capacity 3,500,000 bushels, and the Davidson and Smith elevator with a capacity of 1,750,000 bushels. Following is the Superior elevator with a capacity of 270,000 bushels. This elevator company is contemplating erecting a set of red range lights for the convenience of vesselmasters approaching their elevator. The depth of water leading up to these four elevators is approximately 22 feet.

Wireless Telegraph.—The radiotelegraph station is $\frac{3}{4}$ of a mile NW. of the C.N.R. commercial docks in the heart of the city operated all year round, but only between 8 p.m. and 8 a.m. after close of navigation. Call letters V.B.A. Working distance 350 miles.

Storm Signals.—Day and night are shown from a steel tower on roof of Custom house, 127 feet above the lake.

Port Charges.—Harbour master's dues 50c up to 50 tons register, up to \$7 for vessels of 1,000 tons and over.

Supplies.—Obtainable are coal, and ship's supplies: anchors, kedges, chains, cordage, axes, lifeboat equipment, distress outfits, compasses, whistles, oars, beeswax, varnishes, marine paints, oakum and caulking cotton, pitch, tar, wastes, rope, tackle blocks, wire ropes and blocks, bolts, rubber clothing and boots, brooms, brushes, life jackets, ring buoys, marine glue, side lights, oilskins, oils, greases, packing, flags, pumps, pipe and fitting.

Communication.—Main lines of C.P.R. and C.N.R. pass through the city, and it is a port of call for boats of C.P.R. and Northern Navigation Co.

The City of Port Arthur.—Was named Prince Arthur's Landing at the time of first Red River rebellion expedition under General Wolseley, after the present Duke of Connaught; later the name was changed to Port Arthur. Has extensive railway terminals and grain elevators; lighted by electricity—prominent buildings are Customs building, Prince Arthur hotel, and St. Joseph



Port Arthur Harbour — Superior Elevator, left, Canadian Government and Thunder Bay Elevators.

hospital. In 1921 the city had a population of 14,886. In 1920 Port Arthur had 59 industrial establishments employing 1,765 hands, value of products, \$7,457,816.

Trade.—The chief industries are pulp and paper manufactures; transportation, ship building, the grain trade, and in adjoining districts lumbering and the making of ties. For the fiscal year 1921-22 the value of exports was \$49,879,987; of the imports \$6,525,564.

Shipping.—During the fiscal year 1921-22, 951 vessels, register tonnage 2,589,350, entered the port; 969 vessels, register tonnage 2,601,890, cleared.

Lloyd's Agents.—The Jarvis Agency, Fort William.

Quebec Harbour, Ont.—is on south shore of Michipicoten island, lake Superior, 7 miles from the west and 10 miles from the east end—is in the shape of an inverted L the shorter bar representing the dredged channel, the other the harbour proper. The dredged channel is 200 feet in least width with least depth of $19\frac{1}{2}$ feet.

Anchorage.—Space for anchorage is about 1 mile east and west width of 800 to 1,200 feet, with depths from 6 to 8 fathoms, over mud, and good shelter in all winds.

Magnetic Disturbance.—There is magnetic disturbance of more than half a point in the channel abreast the SE. entrance point of the harbour.

Range Lights.—Front—On north shore of harbour, a white, square, wood tower shows 23 feet above high water a white fixed light.

Back—A similar tower, 600 feet, $0^{\circ} 43'$ true from front shows 67 feet above high water a similar light.

Light on summit of Davicieux island about $\frac{7}{10}$ of a mile SE. of harbour entrance, a white, octagonal reinforced concrete tower shows 129 feet above high water a white fixed group flashing occulting light.

Fog Horn.—A hand fog horn is established on headland at east entrance of harbour.

Buoys.—The west side of the dredged channel is marked by 3 black spar buoys, the east side by 3 red spar buoys.

Wharf.—On north side of harbour near east end, is the wharf of the Dominion Fish Co. 12 feet of water can be carried to the wharf.

LAKE OF THE WOODS.

Kenora Harbour, Ont.—formerly Rat Portage, is on north side of lake of the Woods. The harbour extends from Bunnell's point, on the east, to Reduction Works, on the west, and is approximately 1 mile long by $\frac{1}{2}$ mile wide. The entire harbour is land-locked and is available for small vessels. The water is about 10 feet deep and the bottom is sand, gravel, and mud. There are two entrances, one on the east side from Rainy river direction and the other on the west side from Keewatin channel. Owing to the number of islands in the northern part of the lake of the Woods there are a great many channels and they are generally shallow. A number of these channels are buoyed.

Lights.—For description of lights on lake of the Woods, see Department's 1923 "List of Lights on Inland waters, pages 142 to 144 (inclusive).

Wharves beginning on the west side are: a short dock, 48 feet by 60 feet, 10 feet of water; Town dock, 160 feet by 100 feet, 10 feet of water; Rainy River Navigation Co's wharf, 480 feet by 20 feet, 10 feet of water; Kendall's dock with an "L," 200 feet by 100 feet, 10 feet of water; Town dock, 66 feet by 20 feet with 10 feet of water; Rat Portage Lumber Co's dock, 66 feet by 128 feet with 10 feet of water. There is a spur track to the Rat Portage Company's mill. South of the latter dock is the Rat Portage Lumber Co's repair slip which will accommodate the largest vessel on lakes, say 335 tons registered. The Government wharf of pile construction, total length 399 feet 3 inches, width 16 feet, with an approach of 35 feet of earth and rock. This wharf has been sheet piled for motor boats, depth of water 20 feet. Coney island pleasure resort has a wharf at the entrance of the Keewatin channel with 6 feet of water alongside.

Communication.—Kenora, Rainy River district, an important lumbering centre with population in 1921 of 5,407—is a station on main line of Ontario division of C.P.R.—has steamer connection with Fort Francis at head of Rainy River.

Trade.—For fiscal year 1921-22, value of imports \$159,969; of exports \$38,912.

Shipping.—During the fiscal year 1921-22, 63 vessels register tonnage 1,226 entered and cleared the port.

RED RIVER, MAN.

Selkirk Harbour, Man.—is on west shore of Red river about 24 miles north of Winnipeg, about 9 feet of water can be carried to the wharves—is the most important port on the Red River apart from Winnipeg and is the headquarters of all government steamers, dredges, etc., used on lake Winnipeg and Red river.

Lights. —On government wharf are 7 electric incandescent lights on iron poles, 23 feet above high water, white fixed.

Shipyard.—A shipyard belonging to the Department of Public Works is established at Selkirk.

Marine Railways.—The Dominion Government has a marine railway capable of raising any vessels passing through St. Andrews locks. The Dominion Fish Co. operate a smaller one.

Wharves.—There is a government wharf and several private wharves at Selkirk.

Town of Selkirk, Selkirk Co., is a station on Winnipeg Beach branch of Canadian Pacific Railway and on Winnipeg, Selkirk and Lake Winnipeg Electric road.

Northern Fish Co's ss. line from Selkirk to Warrens Landing and occasionally to Norway House, calls at frequent intervals.

Selkirk is an important fishing centre; in 1920 had 10 industrial establishments employing 399 hands; value of products \$1,565,769.

Population in 1921 was 3,726.

Winnipeg and St. Boniface Harbour.—The Red river between Winnipeg and St. Boniface has on either bank a few scattered wharves of cribwork built over piling with earth backfills.

Of these the most important is the one called the Commissioners dock, formerly the Dominion Government wharf, at Water street, turned over to the Winnipeg and St. Boniface Harbour Commission on its formation.

St. Andrews lock built in 1912 to overcome St. Andrews rapids, about 19 miles from Winnipeg, enables vessels to proceed from Winnipeg to lake Winnipeg a distance of about 46 miles, the lock chamber is 215 feet in length, breadth 46 feet, depth of water over the sill 9 feet.

The portion of the river between Winnipeg and St. Boniface can scarcely in any sense be designated as a harbour; the depth in the main channel of the river at low water is only 9 feet, and the Commissioners report that owing to the nature of the current and winding course of the stream, it is extremely difficult to work out an effective scheme for the stabilization of the banks. Conditions, however, have improved since the Commission took the work in hand.

Harbour Commission.—The Winnipeg and St. Boniface Harbour Commission consists of 5 commissioners, 3 appointed by by-law of the Council of city of Winnipeg, and 2 by by-laws of city of St. Boniface, who report annually to the Minister of Marine and Fisheries.

Shipping.—The Commissioners report that for the last four or five years, the principal shipments reaching the port have been sand, gravel, stone, cordwood, lumber from mills on the lake and ice for city; these shipments about comprise its shipping trade.

No shipping returns are given for this port by the Department of Customs and Excise.

Lloyd's Agent.—Wm. Rae Allan, care of Allan, Killam & McKay, Ltd., 364 Main street.

KOOTENAY LAKE, B.C.

Kaslo Harbour, B.C.—is on north end of Main Kootenay lake. Has steamboat connection with Ainsworth, Lardeau, Nelson, Proctor, Kootenay Landing and other places.

Light on end of Spit, Kootenay lake, a pole on pile foundation lat. N. 49° 55' 00", long. W. 117° 0' 0" shows 21 feet above high water, a white fixed light.

Communication.—Postal and telegraph—station on Kaslo and Nakusp division of the C.P.R.

Canadian Pacific Railway, B.C. Lake and River service between Nelson and Kaslo, calls 6 times a week, between Kaslo and Lardeau 3 times a week.

Shipping.—During the fiscal year 1921-22, 438 vessels register tonnage 216,121 entered the port, 436 vessels register tonnage 216,130 cleared.

Nelson Harbour, B.C.—On the south-western arm of Kootenay lake about 16 miles from the main body of the lake is the most important port on Kootenay lake.

Lights.—Procter—at entrance to west arm of Kootenay lake, a mast, white shed at base, shows 20 feet above high water a white fixed light.

Range Lights.—Procter range—front—on south side of entrance to west arm of Kootenay lake, a mast shows 40 feet above high water, a white fixed light.

Back—A mast, 500 feet 215° true from front shows 50 feet above high water a white fixed light.

Beacon.—Procter middle ground beacon at entrance to west arm of Kootenay lake, dolphin topped by slatwork, and cross-arm carrying lantern, shows 10 feet above high water a red fixed light.

Communication is a station on Boundary section of B.C. division of Canadian Pacific Railway and on Procter extension of B.C. division of same line, and a terminal on Spokane Falls line of Great Northern, Spokane to Nelson, Canadian Pacific Railway, B.C. Lake and River Service, on Kaslo route calls 6 times a week. On Crows Nest route 7 times a week.

Town of Nelson.—Nelson is the centre of a large mining district and has a very considerable trade. In 1920 it had 53 industrial establishments employing 380 hands, value of products \$1,347,728. Population in 1921 was 5,230.

Trade.—For the fiscal year 1921-22, value of imports \$308,580; of exports \$191,067.

Shipping.—During the fiscal year 1921-22, 2,085 vessels register tonnage 883,938 entered the port, 1,822 vessels register tonnage 752,994 cleared.

Lloyd's Agent.—John Fraser.

YUKON.

Dawson.—Yukon territory—is on Yukon river about 335 miles northward of Skagway—steamers make the journey from Dawson to Skagway down stream in from 6 to 7 days.

Wharves.—There are two wharves at Dawson and some storehouses, depth of water alongside the wharves is about 6 feet.

Communication.—Postal and telegraph. The Grand Trunk Pacific Coast Steamship Co. Ltd., from Prince Rupert, White Horse and Dawson Line calls.

Communication by light draught boats also with places on Yukon, White, Pelly, and Lewes rivers, and lake Teslin.

Trade.—For the fiscal year 1921-22, value of exports \$391,638; of imports \$232,343.

Shipping.—During the fiscal year 1921-22, 121 vessels register tonnage 54,835 entered the port, 127 vessels register tonnage 53,212 cleared.

White Horse—Yukon territory—is on Lewes river between lakes Laberge and Marsh. The Lewes empties into the Yukon, and navigation continues to

Dawson. Steamers plying between Whitehorse and other points draw about 5 feet loaded.

Wharf.—There is a wharf at Whitehorse with 10 feet least water alongside; it is used by steamers on the Yukon route.

Communication.—Postal and telegraph. Is a terminal of the White Pass and Yukon road, Skagway to White Horse.

Grand Trunk Pacific Coast Steamship Co., Ltd. White Horse and Dawson line calls.

Trade.—For the fiscal year 1921-22, value of imports \$68,257; of exports, \$59,699.

Shipping.—During the fiscal year 1921-22, 122 vessels register tonnage 40,584 entered the port, 75 vessels register tonnage 34,651 cleared.



